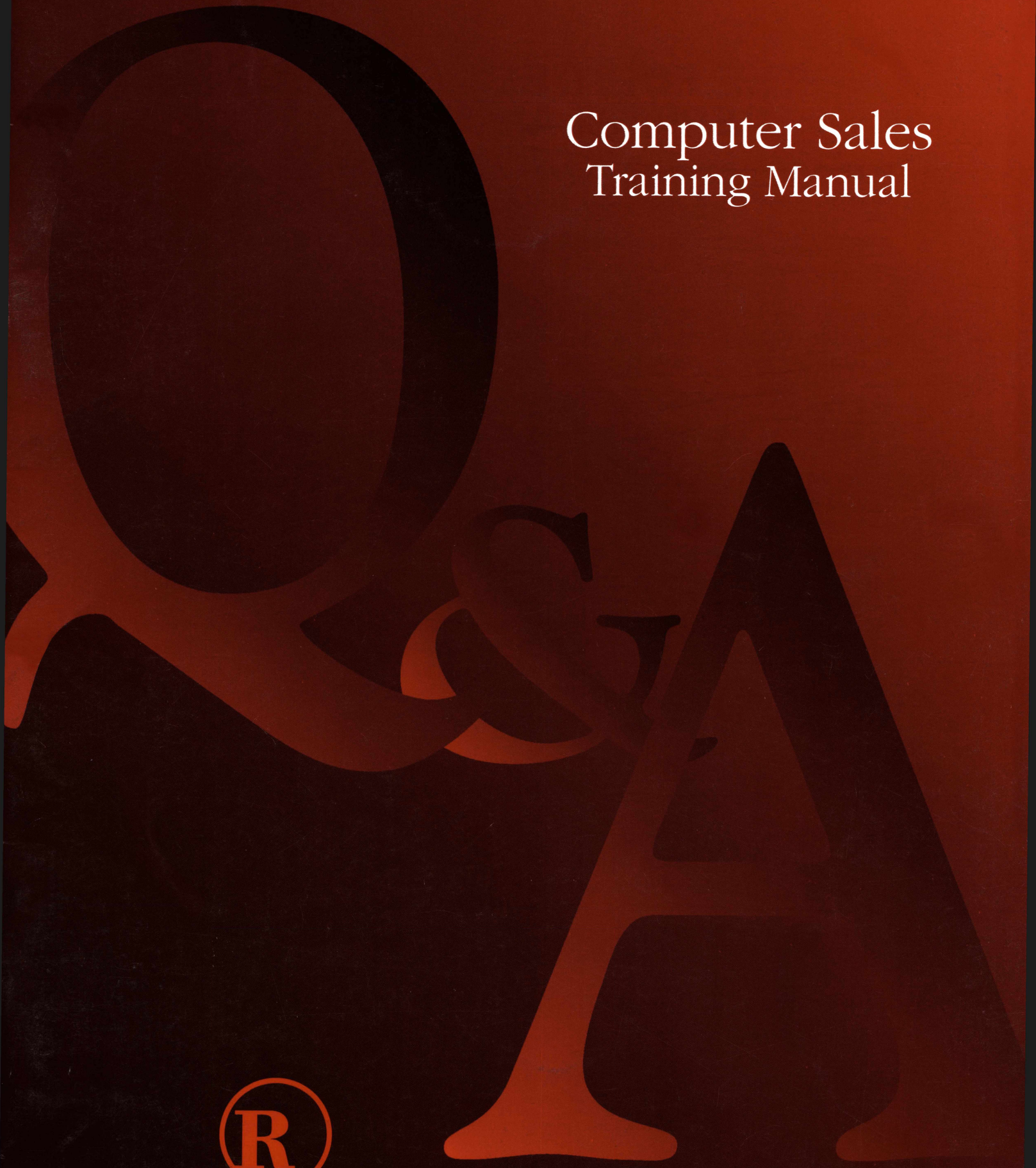
Computer Sales Training Manual



RadioShack℠

You've got questions. We've got answers.℠

THE FOURTEEN STEPS OF *SERVING* AND *SELLING*

1. **PREPARATION!** Get yourself, your store and your products ready to meet your customers' needs!

2. **APPROACH!** Don't make customers find you! Approach them and let them know you're ready to serve! They came for a reason — make it easy!

3. **GREET!** The basics of good serving are enthusiasm, a warm smile, a genuine interest in your customers, knowledge and appreciation of your products and a determination to make the most of every customer contact!

4. **BUILD A BOND!** The **PROFESSIONAL** server is always working to reduce defensiveness and build bonds of confidence and communication with customers!

5. **UNDERSTAND** your customers' needs, interests and desires! Ask questions and really **LISTEN** to the answers! Nothing builds trust faster!

6. **PRESENT / DEMONSTRATE!** Show that you listened and are competent to help by presenting and demonstrating products that meet their stated needs!

7. **RELATE IT TO THEIR NEEDS!** Help your customers see how the products relate to the needs, interests, and desires they've mentioned!

8. **SHARE THE RADIO SHACK BENEFITS!** If you really care, you want them to have the special benefits that only we can offer.

9. **SEE IF THEY'RE READY!** Ask non-threatening questions to see if the customer is satisfied and your products have solved their problem!

10. **RESPOND TO ANY CONCERNS!** Frequently, the biggest obstacles to helping your customers are their own fears, uncertainties, and doubts! If they don't act now, they may miss the value and potential savings!

11. **HELP THE CUSTOMER DECIDE!** Customers must overcome their fears and **ACT** if they are to have the products they really want . . . today!

12. **GET SOMEONE WHO CAN HELP THEM!** If you can't help your customer, turn them over to someone who can help!

13. **EVERYTHING THEY NEED!** Don't let them forget batteries or cassettes that they will need. Recommend the security of Tandy Service Plans and convenience of **RSVP**! Show them other special values they may desire!

14. **FOLLOW UP!** Thank them and reassure them again before they leave. If appropriate, send a thank you note or call and follow up! Take an interest and continue to serve after the sale!

Volume 11

Sales Associate Certification Program

Computer Sales Training Manual

Table of

Contents

Introduction — **The Certification Program** **5**

COMPUTER SALES **6**

Commodities versus Solutions 6

BITS, BYTES AND CHARACTERS **8**

BASIC COMPUTER EQUIPMENT **8**

Central Processing Unit (CPU) 9

MMX 9

Memory 10

Keyboard 11

Mouse 12

Monitors 13

Liquid Crystal Displays 15

STORAGE DEVICES **15**

Floppy Disk Drive 16

Hard Disk Drive 18

MULTIMEDIA COMPUTING **19**

The CD-ROM 19

DVD 19

MPEG-1 20

Advanced Sound Card 20

FAX-MODEMS **21**

Interrupts, COM Ports, etc. **22**

Internet **23**

PRINTERS **23**
Daisy-Wheel Printers 24
Dot Matrix Printers 24
Laser Printers 24
Ink Jet Printers 24
Color Printing 25
OPERATING SYSTEMS **26**
Windows Operating Environment 27
A Typical Window 28
The Explorer 30
Running Windows Applications 31
Microsoft Tools 31
Setting Up Peripherals 34
The Windows Tutorial 35
MULTIMEDIA SOFTWARE **35**
THE LOCAL AREA NETWORK (LAN) **36**
TOP 10 CUSTOMER BOO BOOS, AND
HOW TO FIX THEM **37**
SELLING COMPUTERS **39**
The Computer Sales Cycle 39
Computer Customers 39
Qualifying Questions 40
Why Do People Buy? 41
The Personal Computer Prospect 42
Business Computer Prospects 46
Demonstration 48
Follow-Up 49
Non-Computer Prospect 50
WHY RADIOSHACK: **51**
MAKING PRODUCT COMPARISONS **52**
FINANCING PLANS **53**
RadioShack Value Plus (RSVP) 53
Sanwa Leasing Corporation 53

RadioShack Commercial Charge Accounts 53
SUPPORT SERVICES 54
RadioShack Repair Services 54
Computer Customer Service Line 54
Product Support Library (Faxback) 55
PAID SUPPORT SERVICES 55
Tandy Service Plans (TSP) 55
WHAT'S NEXT FOR YOU? 56
Working the Tutorials 56
COMPUTER SELLING AIDS 56
The RadioShack Catalog and Flyers 57
Product Information Sheets 57
Merchandising Newsletter 57
The C-Notes 57
The Bottom Line 57
GLOSSARY 58
INDEX 73
CERTIFICATION EXAMINATION 75

Introduction

The Certification Program

Aim to be a "Certified Product and Selling Specialist!"

The certification program is designed to certify our Sales Associates as specialists in particular product and selling skills categories. These Sales Associates become "Certified Product and Selling Specialists" for their store.

Our objective is ultimately to provide unsurpassed customer service with knowledgeable, trustworthy sales associates.

The objectives of this program are:

- To motivate our employees to gain expertise in these product and selling skills categories;
- To recognize individual achievement and thereby;
- To provide unsurpassed customer service.

By meeting these objectives, RadioShack will be developing a sales force who knows how to sell and who can serve the customer. We will be providing our customers with an experienced sales Team and we will be meeting our objective of Guaranteed Customer Satisfaction.

This Certification Guide is for the Computer Sales Training Program. All full and part-time staff, including managers, are expected to become certified in this category.

Every Sales Associate will receive a manual for each category of certification. This manual will be a detailed instructional program offering the associate technical and selling skills information. A comprehensive examination will be included.

A passing score of 90% or higher is required.

The Associate must complete the comprehensive examination to fulfill the requirement for certification. The Sales Associate must score a passing grade of 90% or higher to be certified in that particular product or selling skills category.

This test will be sent to Training and Development in Fort Worth for scoring. Training and Development will notify the District Sales Manager in writing of those candidates who have passed.

If the associate does not pass the exam, they can take the exam over again until they do pass.

Chapter 1

Computer Sales

Your job as a RadioShack Sales Associate is customer service. You will be asked for advice from a variety of users who demonstrate a wide range of skill levels. They will vary from the basic novice who has virtually no understanding of computers or computer terms to the advanced user who has managed the operation of sophisticated systems.

Can one individual possibly learn all the technical information in the world's most explosive area of growth for both your product line and your competition? Of course not. That is why you are given a range of resources to assist you in serving your customer's needs. There is technical support like 1-800-2-TANDY-4, selling tips and pricing information in the C-Notes, and ongoing update information in the Monthly Merchandising Newsletter. There are post sale support services for you and your customer from IBM.

You are part of a team in selling computer solutions for your customers. This manual will teach you about the resources available from our team to help you serve the customers' needs.

Commodities Versus Solutions

There has been a shift in the way people buy computers. As some customers gain more familiarity with what computers can do, they view them as a commodity that can be purchased off the shelf, or even by mail.

This "commodity buyer" will need your help in matching the performance aspects of the computer with competitive information. You will be pressed to constantly update your knowledge of your own line of Name Brand computers, and develop skills in doing product comparisons. This manual will show you how.

Many of your customers will have little knowledge or experience with computers, and they will need more general knowledge of what a computer can do for **them**. Your challenge with this buyer will be to determine how they plan to use the machine and match your line of Name Brand computers, with appropriate software, to meet their needs.

Our approach to selling computers at RadioShack is to offer a single solution to fit the customer's needs. RadioShack offers the equipment, accessories, software, service and support that insures their success in their search for a computer solution.

A computer is simply a box. It is a sophisticated machine capable of processing information. It is a tool or commodity. Until you assist the customer in matching what the computer is capable of doing to the customer's needs, you will find that all the technical knowledge and information that you absorb will not lead to a sale.

Only through relating to the customer's needs will you reach your full potential in this financially rewarding sales area.

This training manual will give you the basic language of computers. You will learn the terms for devices and components. This knowledge is necessary for you to communicate with the customer. Never lose sight of the fact that your customer doesn't want a computer. Your customer wants to keep records, educate children, learn more about computers, "surf the NET," or entertain the family.

You will learn the basic "language" of computers - the terms for devices, components, software, etc.

You are the person the customer has come to for a way to meet these needs. This manual will teach you how to ask questions to find out what those needs are and to meet them through supplying a full solution of equipment, software, service and support.

Few people today have not had some contact with computers or the end product of computer processing. Computer technology is one of the fastest expanding areas of growth in the market today. Computers have advanced from massive machines of minimal capability requiring specialized knowledge and strictly controlled environments to today's desktop and laptop machines capable of a variety of personal, business, entertainment and educational functions.

Computer Sales Training Manual

With the diversity of computers and programs available today, your challenge as a RadioShack sales associate will be to assist the customer in selecting the right computer for their needs. This **Computer Sales Training Manual** will give you an understanding of computer terms and concepts and to introduce you to the principles involved in selling our line of Name Brand computers.

Computer sales represent an important part of the total business of RadioShack stores and offer you exceptional opportunities for higher earnings through the sale of the basic equipment, accessories, programs, and Tandy Service Plans.

Computer customers represent a steady base of repeat business for new equipment, programs and supplies (such as diskettes, paper, printer ribbons and cartridges, software and accessories). How much you earn will be directly related to how much you understand this high-technology area.

Chapter 2

Bits, Bytes, and Characters

A bit is the most fundamental unit of computer data

The starting point of computer data, the smallest, most fundamental unit, is called the **bit**. The word 'bit' is a contraction for binary digit. Binary digits, or bits, are similar to decimal digits, 0 through 9. But there are only two different bit values, zero and one, or 0 and 1. They represent OFF and ON, False and True, No and Yes. It is the concept of the bit that makes information-handling machines, or computers, possible. These machines work with these ON/OFF signals at great speed to process data.

1 Byte = 8 Bits

A **byte** is eight bits, taken together as a single unit. Bytes are important because they are the practical unit of computer data. Microcomputers are built to manipulate and work with bytes. This is why you hear memory capacity expressed in bytes, kilobytes and megabytes. A kilobyte (K) is equal to 1,024 bytes. Although "technically" a megabyte (Mb) is equal to 1,048,576 bytes, most manufacturers today define a megabyte as one million bytes, and a gigabyte (GB) as one thousand megabytes. Because there are eight bits in a byte, there are potentially 256 combinations of On or Off settings inside a byte.

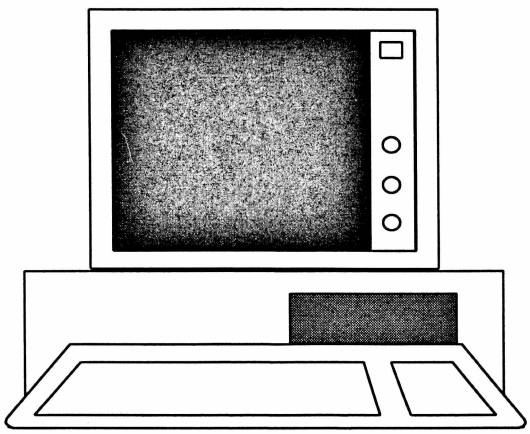
A **character,** (for example, an 'A') is a distinct bit combination found in one byte. There are 256 different characters, including the alphabet, that one byte can produce. This character set makes up the widespread language known as the **ASCII**, the **American Standard Code for Information Interchange.** This character code set allows computers to exchange information the same way that two telegraphers might use Morse code to transmit a message over a telegraph wire.

Chapter 3

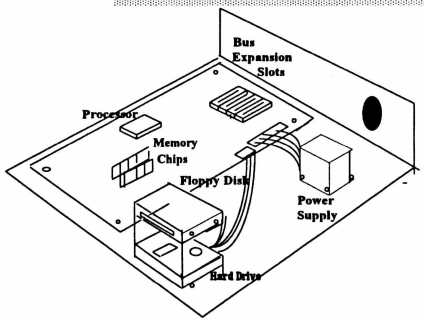
Basic Computer Equipment

A basic computer system is made up of several parts or components. The physical electronic and mechanical components of the system are referred to as **"hardware."** The programs used by these components to accomplish a given task are referred to as **"software."**

The typical, basic system hardware consists of a **Central Processing Unit (CPU), keyboard, pointing device (mouse or trackball), monitor** and **storage device(s)** together with their **accessories** and **peripherals.** No matter what brand of computer you're selling, they all have these basic components in common. We will describe each of these components in detail as part of this training.



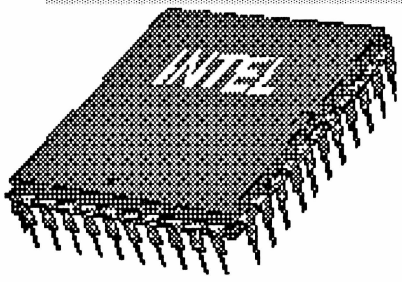
System Unit



The **System Unit** is the heart of the computer system. It is the main "box" portion of the system that houses the processor, memory chips, power supply, system bus (or path for internal signals) and control devices.

The System Unit usually houses the main storage devices such as floppy disk drives as well as hard disk drives. All operations of the computer will pass through parts of the System Unit as demanded by the operator and the program.

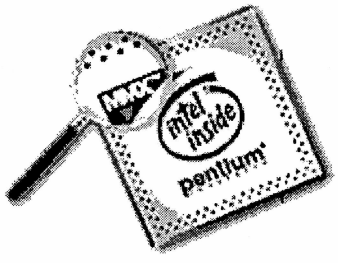
Processors



The **processor** (or CPU) can be thought of as the main "brain" of the system. It is an incredibly complex component called a microprocessor chip. This microprocessor chip contains the physical components that allow a computer to process information. All the program instructions will be routed through and worked by this single component to control information in and out of the computer.

The most common processors are Intel's 80486dx and Pentium. The newest microprocessor chip invented by INTEL™ Corp. (the leading manufacturer of PC microprocessors) is the MMX **Pentium processor** chip. Computers with 486 and Pentium types of microprocessors are commonly referred to as AT (Advance Technology) style computers. These processors determine the speed rating of the computer and can be used as a determining factor when comparing computers.

MMX Technology



The Pentium processor with MMX technology includes improvements that provide a better, smoother, more realistic multimedia experience. A Pentium processor with MMX technology makes a PC run 10-20% faster than an ordinary Pentium processor-based system at the same clock speed.

MMX has 57 powerful instructions specifically designed to manipulate and process video, audio, and graphical data efficiently. These instructions are oriented to the highly repetitive sequences often found in multimedia operations.

Through a process called Single Instruction Multiple Data (SIMD), the MMX Pentium processor can better handle the repetitive loops that are often found in multimedia and communications commands. With SIMD, one instruction can perform the same function on many pieces of data (like a drill sergeant telling an entire platoon, "About Face," rather than commanding each individual soldier one at a time). This allows the processor to reduce compute-intensive loops common with video, audio, graphics, and animation.

As software developers take advantage of MMX, the quality of multimedia applications will continue to improve.

RAM

SIMM Chips - Single In-Line Memory Modules

DIMM - Dual In-Line Memory Modules

Before a computer's processor can work with information, the information is first loaded into a set of chips called **Random Access Memory (or RAM).** These chips hold the information for use by the processor only as long as power remains active. The current style of RAM chips are called **SIMM** chips. This stands for Single In-line Memory Modules.

You will also hear about **DIMMS (Dual In-Line Memory Modules).** The advantage of DIMMs is their ability to process twice the information of SIMMs, without being twice the size.

Extended Data Output, or EDO memory, is a recent innovation in RAM chip technology. On computer systems designed to support it (like the IBM Aptiva), EDO memory allows a CPU to access memory 10 to 15% faster than regular RAM chips.

Should the machine be turned off, any work that has been done without being copied or transferred to a more permanent storage device will be lost. For this reason RAM is referred to as **volatile** memory. The amount of RAM varies from machine to machine. Typical systems usually start with 8 MB or more. Many computers allow for the installation of additional memory chips as an expansion option.

The amount of RAM must be sufficient to hold all the information required by the system at a given time to perform the program operations. What is stored in RAM can vary from one moment to the next as work progresses in the computer. Various program instructions and data will be loaded into this memory according to the instructions of the operating system and the program.

Conventional vs. Extended Memory

Back when PCs first were on the market, they used memory called ***conventional memory****. Software specified the amount of memory (RAM) needed - usually 512K or 640K. If the computer had that much available memory then the software would run and you could start working.*

Unfortunately when early PCs were designed, they only were able to access and run software in the first 640K of memory. As software programs became more powerful and bigger, they grew hungry for more and more memory. The software programmers hit a brick wall; they needed more memory to run these new programs. So the programmers wrote new programs that tricked the PCs operating system into using more memory beyond the initially designed limit of 640K. This new memory is called ***Extended Memory.***

Extended Memory *is a type of memory that is accessible on 80486 and Pentium computers. Older programs use the first 640K of memory (conventional memory) and operating systems like Windows 95, use any and all of the rest of the memory available. Today's Pentium-based computers can address as much as 4 GB of memory!*

ROM

Read Only Memory (or ROM) is permanent, unalterable information that is physically encoded on a chip. ROM can be accessed by the computer for use, but cannot be changed.

When computers access information from any memory or storage, they are said to "read" the information. Since this form of storage memory can only be accessed (or read) and not altered (or written in computer terms), it is referred to as "read only" memory.

While detailed computer specifications will usually list the amount of ROM a computer has, it is not commonly described in the brief catalog or advertising descriptions since it normally deals with basic, transparent instructions concerning device performance based on the computer's technical specifications. Since it is not controllable by the user, it is rarely described.

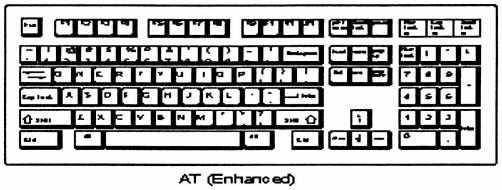
Cache memory

Cache memory is a special, high-speed memory designed to accelerate processing of memory instructions by the CPU. The CPU can access instructions and data located in cache memory much faster than from main memory. For example, on a typical 100-Mhz system board, it takes the CPU as much as 180 nanoseconds to obtain information from main memory, compared to just 45 nanoseconds from cache memory. Therefore, the more instructions and data the CPU can access directly from cache memory, the faster the computer can run.

You can think of cache memory as a worker's tool belt that holds the tools needed most often. Main memory (RAM) would be a portable tool box, and the hard drive is like a large utility truck or workshop.

Keyboard

At first glance, the keyboard of today's Windows 95 computer is similar to that of a standard electric typewriter with some added keys.



AT (Enhanced)

Our current line of Name Brand desktop computers feature a form of the 101-key enhanced keyboard. Newer models also have a dedicated "Windows 95" key that provides shortcuts for users. Some minor variations may occur in key placement, key interval spacing or physical size on our desktop units.

Laptop computers have the keyboard, CPU and display built into one compact piece. In an effort to hold down both system size and weight, these keyboards will vary significantly from one machine to another, because of the desire to keep the machines as small and light as practical.

Computer keyboards have all standard typewriter keys plus; Function Keys, A Numeric keypad, Curser Keys, CTRL, ALT, PrintScreen/SysRq, Scroll Lock and Pause/Break.

There are several additions to the traditional typewriter keys on a standard 101 key enhanced keyboard. First is a set of Function Keys. The keys labeled F1 through F12 are arranged across the top of the keyboard. Their function will change from program to program and are used to perform a variety of the most frequently used jobs the program can accomplish. The program instructions will tell you how to use them in a specific application.

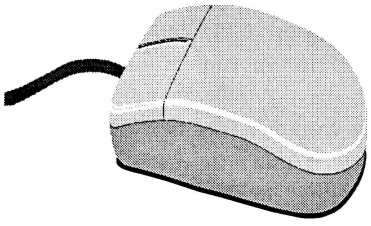
The keyboard also features a numeric keypad for convenience in working with numbers, such as in accounting or spreadsheet applications.

There is also a set of cursor control keys consisting of four arrows, page up, page down, home, and end. These keys allow the user to move the cursor (or placement marker) to the desired position in a program.

Finally, there are keys labeled CTRL (Control), ALT (Alternate), Print Screen/SysRq (System Request), Scroll Lock and Pause/Break. These keys vary in function from program to program, much as the function keys described earlier.

Mouse

Another form of cursor control device is the mouse. A mouse is a device which is rolled across a tabletop or pad to control the cursor in a corresponding manner. Move the mouse to the right and the cursor moves to the right a proportional distance. If the mouse is rolled on a diagonal line, the cursor follows the same proportional diagonal path on the screen.



The use of a mouse allows the operator to be more flexible in computer control. This is particularly desirable in applications which allow the user to draw pictures, or select items from large menus, since it can move directly from one point to another.

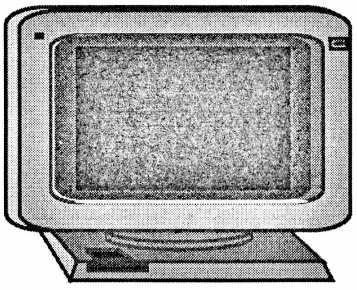
A mouse usually has either two or three buttons on the top, which allow the user to begin, end or continue functions the program allows the mouse to perform. The mouse usually plugs into the back of the computer through either a serial port or, most commonly, a dedicated mouse port (PS/2).

Other types of pointing devices include trackballs (which look like an upside-down mouse), Trackpoint on IBM notebook computers, and Glidepoint, which lets you use your finger as the pointer.

Review

1. RadioShack's technical support number for employees is _____.
2. Computers consist of 2 general components, _____and _____.
3. The new processor technology found in our Aptivas is _____.
4. RAM stands for R_____ A_____ M_____.
5. ROM stands for R_____ O_____ M_____.

Monitors



The typical computer display device is called a monitor. It is similar to a television screen with very high sharpness and clarity specifications. The most common type uses a picture tube, just like a television set. This picture tube is called a **Cathode Ray Tube** or **CRT.**

The picture tube usually has a flat, non-reflective surface facing the user. On the interior of this surface is an arrangement of phosphor dots called picture elements, or "Pixels." At the back of the tube three electron "guns" generate beams of charged particles which causes the pixel to glow when it is struck. The pattern of lighted dots produces the image.

The more pixels that a monitor has on the screen, the sharper the definition of the image will be. This is referred to as "resolution." Resolution is measured by the number of pixels across and the number of lines of pixels from top to bottom on the screen. A screen with 640x400 resolution would have an arrangement of 640 pixels across the screen and 400 horizontal lines. It would be four times the resolution of a monitor having 320x320 resolution, since it has four times as many total pixels available to produce a screen image (640x400=256,000 versus 320x200=64,000). Our current monitors can display resolutions of 1024x768.

Another measurement of a monitor's resolution is **DOT PITCH.** Dot pitch is a measurement of the spacing between pixels on a monitor's screen. As you could imagine, the distances between pixels is microscopic, so dot pitch ratings are expressed in fractions of a millimeter (mm). The closer the spacing the better the resolution. A monitor with a dot pitch of .28mm would be better than a monitor with a dot pitch of .39mm, because that monitor's dot pitch, rated at .28mm, has pixels spaced closer to one another than a monitor with .39 dot pitch.

There are several advantages to having a lower dot pitch number. A sharper looking picture is one major advantage to a better dot pitch monitor. Another advantage gained by having a lower dot pitch number is increased resolution, which in turn increases the amount of information (colors) that can be viewed.

Monitors are often identified by the size of their CRT, 14-inch, 15-inch, 17-inch, etc. A portion of the CRT is usually hidden behind the monitor cover, so the portion of the screen you can actually view is the "Diagonal Viewable Size." The average 14-inch monitor, for example, has a diagonal viewable size of between 12 and 13 inches.

RGB Monitors

Most older color monitors are referred to as RGB (standing for Red, Green, Blue). This simply means that the tube has three "guns" internally, one for each of the three colors. As the pattern of dots is lighted with the appropriate gun, the picture is produced in the desired color by varying the intensity of the combination of these three colors.

CGA

CGA (Color Graphics Adapter) systems work with a digital system to produce the color by directing the guns to light the appropriate dots.

Monitors have undergone dramatic improvement in recent years. Different systems of dealing with color images have advanced to near photographic quality.

VGA/ SVGA

VGA and **SVGA (Video Graphics Array** and **Super Video Graphics Array)** systems use an analog system that allows for more subtle variation and shading. VGA has become the standard entry level monitor. SVGA has become the step up monitor and is very effective at displaying TV like pictures. The more advanced systems of this type can display up to 256 colors on the screen at once from a choice of 16 million different colors. They can also support resolutions as high as 1024 x 768, and higher.

Very Low Magnetic Frequency (VLMF) Standards

Many new monitors adhere to very exacting standards for the type and amount of magnetic emissions they produce. This is an important benefit to customers with small children and for environments where several computers are in use.

VLMF is one of the more rigid standards in the industry on emissions from monitors. Be sure to point out the benefit to your customer of increased peace-of-mind through RadioShack's commitment to this health and safety standard.

VESA (Video Electronics Standards Association)

MPR-II

VESA compliant monitors have met guidelines for picture quality set by the Video Electronics Standards Association, and an MPR-II rating shows that a monitor has met strict electrical and magnetic emissions standards set by the Swedish National Council for Metrology and Testing, and all IBM monitors that we carry meet this standard.

Refresh Rate

Another term to know is **Refresh Rate.** This affects whether or not the screen seems to flicker. The refresh rate is a measure of how many times per second the monitor can redraw the screen. If the screen is not redrawn fast enough, images will appear to flicker, because the pixels redrawn first are already beginning to fade. Common refresh rates are 72Hz, 75Hz and 85Hz. The higher the refresh rate, the less you may perceive flickering.

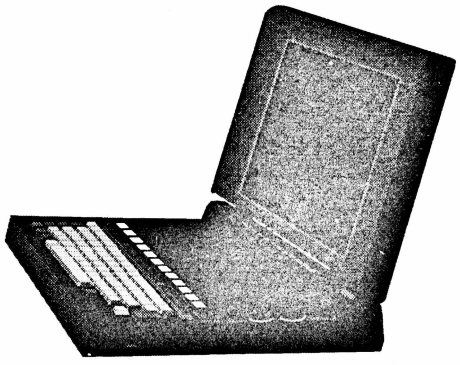
Interlaced/Non-Interlaced

Many new VGA/SVGA monitors are rated by interlaced or non-interlaced. While defining the term "interlaced" can be very technical and confusing, the benefits are not. A monitor that is capable of displaying a high resolution picture in a non-interlaced mode will not produce any flicker on the screen. A monitor that is interlaced when forced to display a high resolution picture may produce a visible flicker. A non-interlaced monitor will provide a steady, clearer picture. As you may have already guessed, a non-interlaced monitor usually costs more.

Liquid Crystal Displays

Because of the bulk required for CRT monitors, a different display is used in notebook (or laptop) computers. These smaller, portable computers use an LCD or Liquid Crystal Display.

The LCD is a flat screen display with each pixel directly wired to the computer's circuit. Instead of a gun and beam arrangement, as found in conventional CRTs, the current traveling to the pixel on this wire causes it to darken. The pattern of darkened pixels produces the image.



Early LCDs required a high level of room light to view the display, since the display emitted no light of its own. Todays LCDs are made more readable by optional lighting schemes: Edge lit or Back lit. Edge lit displays have small lights on the peripheral of the screen which will light the image in dim room light conditions. Back lit displays allow light to pass through the display grid from behind.

While backlit displays allow for more even lighting of the display, edge lit displays are more economical to produce and repair.

LCDs require less power than CRT displays; but because of the limitations imposed in wiring each pixel, the resolution is lower.

Newer LCDs are available in color. The color LCD displays are divided into three classes. The first class of color LCD displays is called **Active color LCD**, it provides the brightest and fastest display. The second class of color LCDs is called **Passive color LCD.** Its color is not as vibrant but costs less and uses less power so a laptop's battery will last longer. A third type of color LCD display is the **Dual-Scan LCD** display, it is a good compromise between Active and Passive color LCD formats.

LCD displays are currently found only in portable computers where bulk, weight and power consumption are critical. The CRT display remains the staple in the desktop market.

Chapter 4

Storage Devices

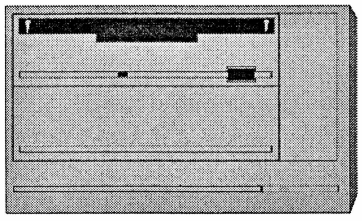
Early Computer Storage

Computers are used to store and retrieve information. The earliest machines used storage media based on magnetic tape, similar to a conventional reel-to-reel tape recorder. Data was arranged on the tape in a straight line, forcing the machine to search the tape in one direction until it reached the point to store or read the data. This greatly limited the speed of data storage and retrieval.

The earliest personal computers used cassette tapes, similar to audio cassettes, to store and retrieve data in the same way. But as the power and speed of processors advanced, new technology to achieve faster retrieval speeds and more convenient storage access was necessary.

The first major advance was the floppy disk drive.

Floppy Disk Drive

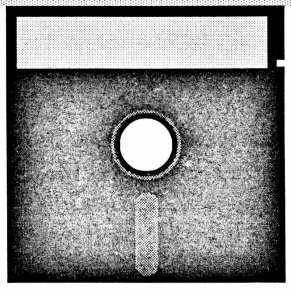


Floppy disk drives are also magnetic storage devices, containing a storage media of magnetic tape. Since they are essentially a flexible base covered with a magnetically sensitive emulsion, they are easily bent. Thus the name "floppy diskette." The first models used large diameter disks (of about 8-inch diameter). Instead of being arranged in a straight line, the data is arranged in a pattern of concentric circles.

The computer uses the outer circle (called track 0) to store an index of the information on the floppy diskette. The information is stored on the diskette as a series of magnetic recordings by a device called a head. As the disk spins in the drive, the head can follow a line toward or away from the center hub, thus accessing any part of the disk rapidly.

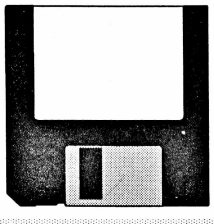
The invention of the floppy disk drive was a tremendous breakthrough in data storage speed, since the computer could now search the entire disk in far less time than it took to read a magnetic tape, where the search speed was limited to the playback speed of the tape.

5-1/4 Inch



The first widely purchased personal computer floppy disk drives used a diskette with a diameter of 5-1/4 inches. The outer sleeve of the 5-1/4 inch diskette is made of a flexible plastic or cardboard material surrounding the actual magnetic disk. The head reads and writes the information through the oval shaped hole (or window) in the disk jacket. Because the magnetic disk is partially exposed to dust and moisture in this type of disk, it has limited durability. This, combined with the ease with which they are damaged due to their flexible design, has caused their rapid replacement by the newer 3-1/2 inch format.

3-1/2 Inch



The 3-1/2 inch diskette contains a magnetic disk with a 3-1/2 inch diameter. It is encased in a rigid plastic case and the read and write window is covered by a sliding metal shutter. This shutter automatically pulls back when the diskette is inserted in the drive.

The rigid design of the case and the sliding shutter to protect the media makes it more durable.

Floppy Disk Capacity

Even diskettes of the same size, either 5-1/4 or 3-1/2, can have different capacities. The original 5-1/4 inch floppy drives sold for Tandy computers recorded information on 40 tracks on one side of the disk only. This produced a capacity of about 170 kilobytes.

The first advance was to record on both sides of the disk, producing capacities of 360,000 bytes (**360K**). As the technology associated with the read/write heads of the drive and improvements in the disk emulsion which stored the magnetic information improved, capacities increased to as much as **1.2 megabytes** (1,200,000 bytes) on a single 5-1/4 diskette.

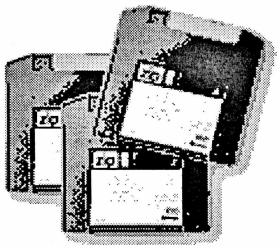
All computers that RadioShack currently carry come with one 3-1/2", 1.44 MB floppy disk drive.

When 3-1/2 inch diskettes were introduced into the Tandy line, they were capable of double-sided storage of 720kb (720,000 bytes) of information. Capacities have increased to **1.44 megabytes** (1,440,000 bytes). Drives storing in excess of 2.8 megabytes are available, but have not gained a foothold in the market place.

These larger capacity diskettes allow the user to store more information on a single diskette, reducing storage space required. The drive mechanisms for the "high-density" disks (both 1.2 and 1.44 Mb) can read and write in the lower capacity (360 or 720 K) formats. This allows for the exchange of information between newer and older machines.

All current line Personal Computers come equipped with one 3-1/2 inch, 1.44 megabyte floppy drive as standard equipment.

Removable Mass-Storage Drives



You use a removable drive the same way you use a floppy: put the cartridge in the drive, copy or write information to or from it, then take it out. The cartridges range in capacity from 25MB to 1 Gigabyte!

Currently, the most popular styles are made by Iomega and SyQuest While all removable drives boasts smooth installation and convenience, and you are most likely to hear about Iomega's Zip drive.

A Zip cartridge is about 4 inches square — a little larger than a floppy disk and about twice as thick. A cartridge this small can hold up to 100 MB of information. The portable drive itself weighs only a pound, so it can be taken anywhere.

These drives are great for both data storage and running applications.

Floppy Diskette Care

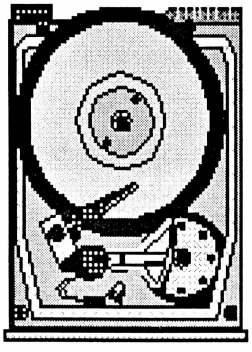
Diskettes hold important data and should be handled with care! Here are some of the basic rules about the care and handling of floppy diskettes. Be sure you are a good example for your customers.

1. Don't bend them.
2. Don't touch any exposed surfaces.
3. Don't store them flat or under books or files.
4. Don't place them near magnetic fields.
5. Don't subject them to extremely hot or cold temperatures.
6. Keep them away from dust and other air particles.
7. Don't spill liquids on them.

The components of the computer can produce both a magnetic field and heat, so diskettes should never be left on top of or against any part of the system. Be especially careful of monitors, speakers, and telephones.

Hard Disk Drive

As the popularity and usage of personal computers increased, so did the demand for even faster, higher capacity storage. The next evolution was the hard disk (or fixed disk) drive. The hard disk actually appeared about the same time as the floppy drive, but it took time to reduce the cost to be affordable.



Hard disk drives, as the name implies, have a rigid disk of anodized aluminum with the same type of magnetically sensitive emulsion bonded to the disk, as with the floppy disk. These disks are arranged, one above the other, on a central hub rotating at high speeds. Each disk has a read and write head above and below. The disks and heads are sealed inside an air-tight case to prevent environmental contamination.

Since the magnetic disks themselves are rigid, they are named "hard disks." Some customers will confuse the hard cases of 3-1/2 inch floppy disks with this term. While 3-1/2 inch disks do have a rigid outer casing, the disk inside is still constructed of a flexible material. Hard disks use a rigid disk and are very rarely removed from the device. For this reason, hard disk drives are also referred to as "fixed disks."

Hard Drives range from 1GB to 3 GB or more

Today's hard disks occupy a physical space in the computer equivalent to a standard 3-1/2 inch floppy drive or smaller. They are typically mounted in the CPU case in one of the device bays. The user then may store, retrieve or erase information from the drive, allowing the storage space to be reused over and over.

The capacity of hard disk drives on the market today ranges from 1 GB to as much as 3 GB or more. This allows the user to store a variety of programs and data, and to access the needed information, without the necessity of changing floppy diskettes.

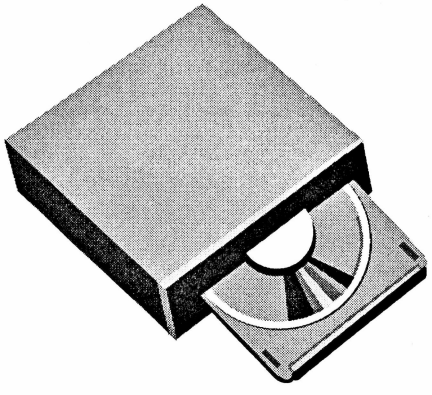
With the higher revolution speed possible in the hard disks and the ability to put more concentric circles of information on each disk surface due to the disk's rigid design, the access speeds possible in this popular storage media are much greater than the speeds possible in floppy diskettes.

Virtually all personal computers today will contain both one 3-1/2 inch floppy drive and one hard disk of at least 1.0 gigabytes of capacity.

Chapter 5 Multimedia Computing

The industry's newest "standard" in personal computers is the Multimedia Personal Computer. This technology brings true interactivity in sight and sound to the user on previously unavailable levels through the use of advanced storage, audio and video devices. Multimedia turns a computer from a data processing machine (spreadsheets, data bases and word-processing) into a device that can also deliver content from a CD disc.

The CD-ROM



Central to the Multimedia concept is the **CD-ROM** storage device. Most people today are familiar with the audio digital Compact Disc. The disc itself is made of anodized aluminum on which information is encoded by pitting the aluminum surface. This aluminum disc is then coated with a plastic which is transparent to a laser beam. The laser is directed at the rapidly rotating disc, thus reading the encoded information.

This same system is used in CD-ROM devices for computers to store vast amounts of information on a single CD. Information from a complete set of encyclopedias together with full color illustrations of near photographic quality and true recorded sound can be combined to fit on a single CD.

CD-ROM is another form of Read Only Memory, as discussed earlier (see page 10) Information on the CD is permanently encoded and can be read but not altered or erased. This makes it perfect for large amounts of reference material or source data such as entertainment, education and productivity.

CD-ROM Drive

A **CD-ROM drive** may be added to virtually any personal computer. The original CD-ROM drives were slow. When video pictures were read from these original drives, the picture was jerky and unnatural looking. Today's standard calls for a faster CD ROM drive commonly referred to as a 8x CD ROM drive. The 8x refers to the unit's speed and improved performance. Today there are even 16x max drives out on the market; however, 8x drives are the standard for now.

A CD-ROM can store up to 650 MB of information, that is, 65 times more than a 3-1/2 inch floppy disk.

DVD - Digital Versatile Disc

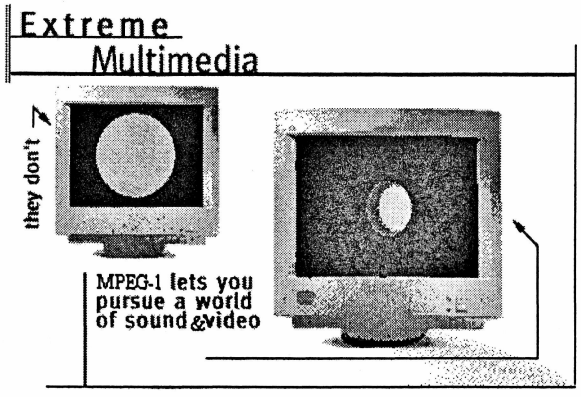
CD-ROMs are taking a major turn in the next few years with the introduction of DVD as a computer storage device. DVD, Digital Versatile Disc, has 12 times the storage capacity of standard CD-ROMs. It can store 4.7GB on a single layer and 8.5GB on a dual layer disc. Eventually, DVD-ROM will also be compatible with future high density recordable (DVD- Write Once{you can write to the disc only one time}) and rewriteable (DVD-Rewritable {write and erase as needed}) media, for virtually endless storage and retrieval possibilities.

There are consumer products called CD-R (recordable CD drives) that allow the user to create their own CDs with music or computer programs. These recorders range from 1x to 6x, and are an effective method of mass data storage.

Multimedia computers are audio players as well as computers. In fact, the computer can play back traditional audio CDs as well as special CD-ROM application programs.

MPEG-1

Great music videos, video clips and MPEG-1 game titles are some of the best parts of multimedia computing. MPEG (named for the Motion Pictures Experts Group that developed its standards) is a way of compressing and decompressing digital video for playback on a PC.



The video you see on a computer is, in a way, "harder" to produce than that on a TV. Video must be digital for a PC to use it. When digitized, a minute of video takes up 1.5 GB of storage space. That's where compression comes in. MPEG takes advantage of software enhancements, handling the burden of both audio and video and eliminating the scratchy, jerky motion common with other technologies. The system now delivers crisp, clear, full-action, full-screen video without tying up the CPU.

Advanced Sound

Multimedia computers feature an advanced sound card. Sound cards bring the listener's multimedia audio experience to a new level. You not only hear sound in front of you, but all around you. 3D sound is here! It was not always that way.

Sound cards were first manufactured with 8-bit digital audio and FM synthesis sound quality. For the first time, the user was able to experience digital audio. Then came 16-bit sound cards with even better sound quality. The sound was fuller and richer and sound effects were more realistic.

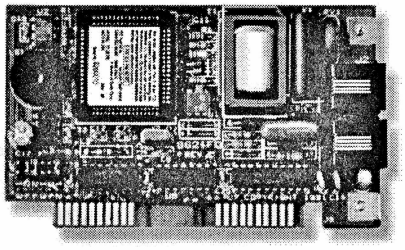
The most common sound boards used today are 32-**bit stereo sound cards**. In advanced computers, like the Aptiva, the cards use wave-table synthesis. Wave-table synthesis uses digitally sampled sounds of real instruments. The result is true reproduction of musical instruments when played back.

This sound card features line level output jacks just like a tape deck or CD player. When these jacks are connected to an amplifier and speakers (or a combined amplified speaker set) digital sound on a par with audio CD players is possible. The computer even incorporates the ability to play an audio CD while the user is working on other computer applications (such as word processing or spreadsheets) at the same time.

Sound cards are also sold separately, and come with programmable software to control volume, bass, treble, and music synthesizing.

Chapter 6

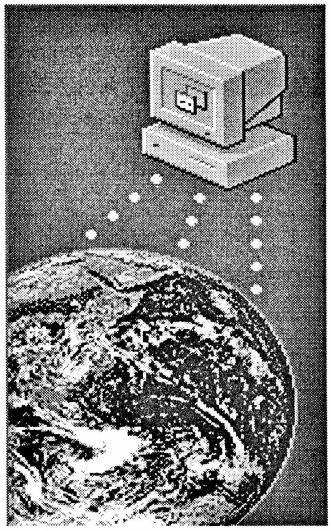
Fax-Modems/Phone Answerers



The word modem is an acronym for MOdulator/DEModulator. Information stored or entered in one computer may need to be shared or accessed by another at a different location. The device for transferring this information from one location to another is the modem. A modem connects the computer to a telephone line. The modem converts the computer's digital signals into analog signals that can be handled by the telephone network. They are then reconverted from analog to digital for processing by the other computer. The information is encoded by the computer and modulated as signals by the modem.

The modulated signal is transmitted down the telephone line, then demodulated by a second modem at the other end and sent to the second computer for decoding.

Fax-Modems do everything a modem does plus it is a fax machine. With the correct software your computer can send anything it can print to a fax machine located anywhere in the world.



The rate at which this modulation of the signal is done is called the **baud rate.** The rate at which the data is transferred is measured in **bits per second (bps)**. While there is a technical difference in the two rates, the terms are often used interchangeably by customers. Common baud rates are 9600/14.4K/28.8K/33.6k-bps and higher.

Since each computer continues to do its own processing, even computers which do not operate in the same manner or which use different operating systems may share information in this way, provided they use the same code for the characters passing over the line and are set to transmit and receive the data at the same speeds (in bps).

A good example of systems sharing information by telephone which use different equipment and operating systems is your own store Point of Sale System. Each night, your local store computer communicates with the Tandy Mainframe in our corporate headquarters in Fort Worth.

The Tandy mainframe bears the same resemblance to a personal computer that a large cargo jet might bear to a small, two passenger airplane. Both serve the same basic concept, but have vastly different speeds and capacities. Let's suppose that your computer was instructed to transmit the name of your customer, Don Jones, to the mainframe.

Though the mainframe is vastly different in type, speed and operating system, as long as the computer can recognize that the characters "D-o-n- (space)-J-o-n-e-s" are being sent, it can accept the information, then work with it as its program instructions require. ASCII code is the

most common form of code used for the transfer. (See Bits, Bytes and Characters on Page 8).

The actual processing of the information at both ends is still done by the local computer. What is required is that the two computers be set to the same transfer speed and agree on the code which the information will be sent.

Installing a modem is not quite as simple as just plugging in a card. There are several issues that you must address to insure that the customer's modem is functioning properly.

The first subject that you must address is the issue of IRQ (Interrupt Request Line) settings. The IRQ is the way that parts of a computer can get the attention of the computer's main processor. For example, every time you move the mouse, the mouse sends a signal down it's IRQ to the computer's processor, which stops what it's doing and displays the mouse's new position on the screen. Each device must have it's own IRQ; if two peripherals try to share one IRQ, neither one will function correctly.

This is why you must make sure that the new modem doesn't use the same interrupt as any of the customer's other peripherals. Be sure to check the instruction manuals for all accessories, as well as the new modem, for IRQ settings and how to change them.

Interrupts, COM Ports, etc.

COM (Communications) Ports present a similar situation. Only one peripheral can address one COM port at a time. If, for example, the customer's mouse and modem are addressing the same COM port, you can change the modem's COM port address in Windows.

Windows 95 has built in Help for this problem, called "Hardware Conflict Troubleshooter". To start up this wizard, click on the START button and choose Help from the menu. On the Contents Tab, double-click on Troubleshooting, then click on the entry labeled "If you have a hardware conflict". You'll see a dialog box appear. Click on the appropriate button to get the process started, then follow the detailed directions.

ISDN

ISDN (Integrated Services Digital Network) is the telephone system of the not to distant future. It was designed by the United Nations with the goal of allowing any communications equipment to plug into any phone jack, anywhere in the world. As ISDN expands, it is proving to be an extremely reliable and fast means of transmitting digital voice and data over existing copper wires, fiber optics, and satellite channels. The difference between the analog telephone service most of us are still using and ISDN is similar to the difference between LP records and CD-ROMs. The digital service of ISDN will allow more information to be sent more reliably, and at higher densities and speeds. All this, and in most cases, without changing the telephone wiring in a house or building!

The Internet

The Internet is an international web of interconnected government, education, and business computer networks - in essence, a network of networks. A person at a computer terminal or personal computer with the proper software communicates across the Internet by placing data in an Internet Protocol (IP) packet - an electronic envelope - and "addressing" the packet to a particular destination on the Internet. Communications software on the intervening networks between the source and destination networks "read" the addresses on packets moving through the Internet and forward the packets toward their destinations.

From a thousand or so networks in the mid-1980s, the Internet has grown to an estimated 500,000 connected networks in 1996. It is estimated that the Internet will double in size in the next 12-15 months. The majority of these Internet users live in the United States or Europe, but the Internet continues to expand as telecommunication lines are improved in other countries.

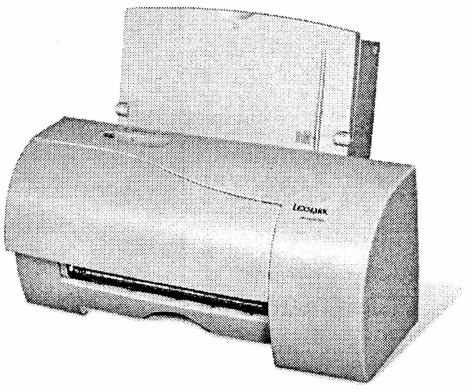
To protect internal business resources against outside intrusions, most businesses set up a "firewall", a stand-alone computer that monitors all incoming Internet communications. This kind of set-up prevents outsiders from gaining access to the company's protected data.

Individual users can also access the Internet through modems attached to their home personal computers. Most of these users subscribe to local networks that provide a connection to the wider Internet, and other special services as well. Besides making available such information sources as on-line encyclopedias and magazines, these services embrace electronic discussion groups on a variety of topics - hobbies, politics, media, games, and the like. Individuals can join any of the discussion groups or can "talk" to each other one-on-one.

The Internet is overseen by The Internet Society, a loosely affiliated group of individual and corporate volunteers with offices in Reston, VA.

Chapter 7

Printers



The computer user often will find it convenient to have information printed on a sheet of paper. This is called "generating a hard copy." To obtain the printout, the computer is connected to a printer by means of a special printer connecting cable. A reference chart (see current RadioShack catalog) is used to select the appropriate cable, since cables which appear identical may have different arrangements of up to 25 wires to connect the two devices.

Printers are divided into 4 main types; Daisy Wheel, Dot Matrix, Ink Jet, and Laser.

The Four Basic Types of Printers:

1. Daisy-Wheel Printers

Daisy -Wheel Printers use a disk-shaped wheel of characters much like many electric typewriters. The wheel rotates and a pin pushes against the appropriate tab on the outer edge of the wheel. The tab stamps the character on the paper by pushing a die-cast character against a ribbon. Although these older printers produce very sharp text, they cannot print pictures or graphics, since the printer is limited to the text characters on the wheel.

2. Dot Matrix Printers

Dot Matrix Printers use a print head with a series of pins arranged in a grid. The computer sends a signal to the printer, telling it which pins to press against the ribbon, producing the desired shape at that location. This allows the printer to produce any shape, limited only to the number of pins in the printer head. Economy model dot matrix printers may have as few as nine pins. This is called a "nine wire print head."

Advanced models capable of producing high quality text will typically have 24 pins or wires. These printers offer an affordable choice for most home users and offices who need to print both text and graphics or print on multiple part forms. The more dots per inch the printer can produce, the sharper and more distinct the image will be.

The dot matrix is the only current printer that can produce multicopy forms. Both wide and narrow carriages are available through RSU.

3. Laser Printers

Laser printers offer high quality text and graphics, but are limited to printing on single part paper. They are ideal in most office environments for high quality correspondence and desktop publishing. This manual, with all it's illustrations, has been produced on a computer with a laser printer, then photo-reproduced using offset printing.

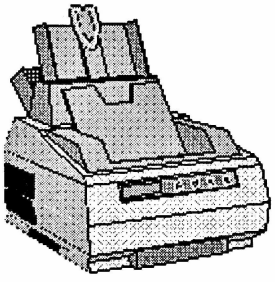
The internal operation of laser printers is complex technology. Characters or patterns are drawn on a rotating drum in response to the signal from the computer. As the drum rotates, the area where the character or pattern was drawn attracts toner, holding it in place until the drum rotates against the sheet of paper, transferring the character onto the sheet. The excess toner is then wiped from the rotating drum and the drum goes on to receive the next arrangement of characters or patterns. Laser printers are usually rated by two criteria. Pages Per Minute **(PPM)** measures the number of pages a laser printer can print in one minute, the higher the rating, the better. Dots Per Inch **(DPI)** is the rating given to a laser printer's ability to produce high resolution graphics. The most basic laser printer has a resolution of 300 x 300 dots per inch, the higher the rating, the better.

4. Ink Jet Printers

The fourth type of printer is the Ink Jet Printer. Heated liquid ink is fired in small dots at the paper by a nozzle. The resulting pattern produces the desired print, much like a dot matrix printer.

The quality of the reproduction of current Ink Jet printers is equal to a Laser printer. An ink jet printer's quality is measured in Dots Per Inch (or DPI) and Pages Per minute (PPM), just like a laser printer.

Color Printing

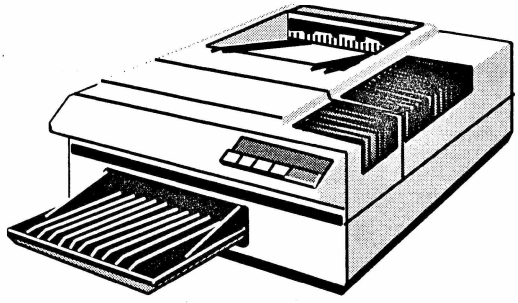


Color printing can be achieved by some dot matrix, some ink jet, and some very expensive laser printers. In ink jet and laser, the ink, in one of four colors (cyan, yellow, magenta or black), is transferred to the paper in various proportions to create the desired color. In dot matrix printers, a ribbon with four horizontal bands (red, yellow, blue and black) is moved up and down between the print head and the paper, allowing the pins to transfer the appropriate color.

Color ink jet printers use cartridges of ink in the appropriate colors and squirt the appropriate quantity of the proper color ink at the desired location. New color jet printers give a very cost effective way to produce color documents with special photo papers and inks. Ink jet printers can reproduce photo quality color graphics. Some ink jet printers use one ink cartridge to produce all the possible colors, or require the operator to switch heads between black and color. Other ink jet printers use two ink cartridges, one for colors and one for black printing only. Having two separate ink cartridges conserves color ink when only printing a black and white document. Color laser printers use colored toner to produce photographic quality documents.

Ink jet color printing technology has become affordable in recent years. Printers with color technology are the printers of choice for family use.

Additional Hardware/RSU



RadioShack Unlimited ™ offers an amazing variety of products. RSU is like having a computer SUPER STORE at your finger tips! Ordering is simple and handled right at the store on your POS, and delivered right to your customer's home or office. We have almost any computer peripheral or accessory you could imagine from the best names in the industry. Hard to find electronic equipment, batteries, software, hard drives, tape backups, printers, 20 inch SVGA monitors and more! It's the ultimate in selection, convenience, and it's only at RadioShack!

Review:

1) There are four types of printers, _____, _____, _____, _____.

2) The latest in CD ROM technology is called _____.

3) Floppy disks are usually found in two sizes, _____ and _____.

4) VGA stands for: _____ _____ _____.

Chapter 8 Operating Systems

The computer's operating system is a basic set of instructions which tells the processor how to work with other components. In addition, the operating system establishes the rules for how program information will be processed and shared with the computer's resources.

Before you can run a program, a computer must first load an operating system as a basic set of rules and regulations to follow. Sometimes, a computer can work with more than one operating system, so the one that matches the program you are trying to run needs to be loaded into RAM before you try to run the program. There are several different operating systems in use on personal computers today. These include Windows 95, MS-DOS, OS/2, Apple DOS and UNIX. Most home computers use Windows 95, MS-DOS or Apple DOS.

Version Numbers

Operating systems and software are given version numbers. These numbers identify which version (or edition) of the program is in use. When programmers make a lot of changes to a program, they release a new version: MS-DOS 5.0, for example, becomes MS-DOS 6.0. If the programmers make just a a few changes, they release a minor upgrade by adding a decimal: MS-DOS 6.0 becomes MS-DOS 6.1.

Later versions of MS-DOS are "backwards compatible" in most respects. This means that a later version of the system (one with a higher number) can work with commands written under an earlier version (one with a lower number) as well as any that are written under the same version.

An example would be a game program that indicates on the box that it "requires MS-DOS 5.0" This program would work with any MS-DOS with a version number off 5.0 or higher, but could not be used with a lower number (such as 2.11).

MS-DOS

MS-DOS stands for Microsoft Disc Operating System. On older machines, DOS handles the chores required to make the computer function: shuffle information to and from various parts of your computer and display it on the monitor for you to see. For example, when you tell DOS to copy a file to a floppy disk, it addresses the drives and tells the computer to find the appropriate information and move it, one piece at a time, to the floppy disk. All you do is type the COPY command; DOS jumps in there and does the rest.

MS-DOS is a single user system. In other words, it is designed to control a single computer, working alone.

OS/2

OS/2 is IBM's second generation operating system. It is known as a *multitasking* operating system. Not only can you run several programs at the same time, but the programs can all be *working* at the same time:

you can format a floppy disk, download a file from an on-line service, and play a game of Radish Invaders - all simultaneously. OS/2 also has the ability to run MS-DOS and Windows programs, as well as its own.

Windows Operating Environment

The Windows operating environment by Microsoft (the same folks that brought you MS-DOS) has become the preeminent program management tool. This interface is included with most computers featuring 80386, 80486, and Pentium processors.

Windows gets its name from all the little windows on the screen. Each window shows some information: a picture, perhaps, or a program you are running. You can put several windows on the screen at the same time and jump from window to window, accessing different programs. (Actually, the windows look like little squares, but who would buy a program called Squares?)

Graphical User Interface

When the personal computer came on the scene in 1977, the user had to learn one of several languages that the computer used as an interpreter. The user then entered the program instructions using this complicated text and numeric instructions to allow the computer to do what the user wanted.

Next came shells that rode on top of the operating system, making the computer easier to use. If this shell was an environment that uses little pictures and symbols, it is called a Graphical User Interface, or GUI. Windows 3.x is just such an environment. Windows 3.x shields you from DOS's cryptic commands and allows you to control your computer without having to memorize things like SHIFT P means print!

Windows 95

Windows 95 combines the best of both worlds. It is both an operating system and a graphical user interface. With Windows 95, Windows and DOS are no longer two separate programs. Instead, Windows 95 has absorbed the code that made DOS work. That way, with Windows 95 you don't need a separate copy of DOS anymore. Windows 95 can run DOS programs and Windows programs.

Windows 95 automates many computing chores. To install a program, for example, just push the floppy (or compact disc) into the drive and click the Add/Remove Programs button. Windows will search all your drives for the installation program and run it automatically. Features like this make Windows 95 easier for beginners to use.

Memory Management

MS-DOS was originally designed to manage a maximum RAM of 640,000 bytes (640K). As programs became more sophisticated, larger amounts of memory were needed to work with the information required. Without instructions on how to manage more memory, the amount of RAM above 640K is useless in program applications. Windows includes the instructions so the computer may use RAM above the 640K barrier set by MS-DOS. Windows is a huge program, so this memory management was the first step to many of its other features.

What Windows 95 Requires

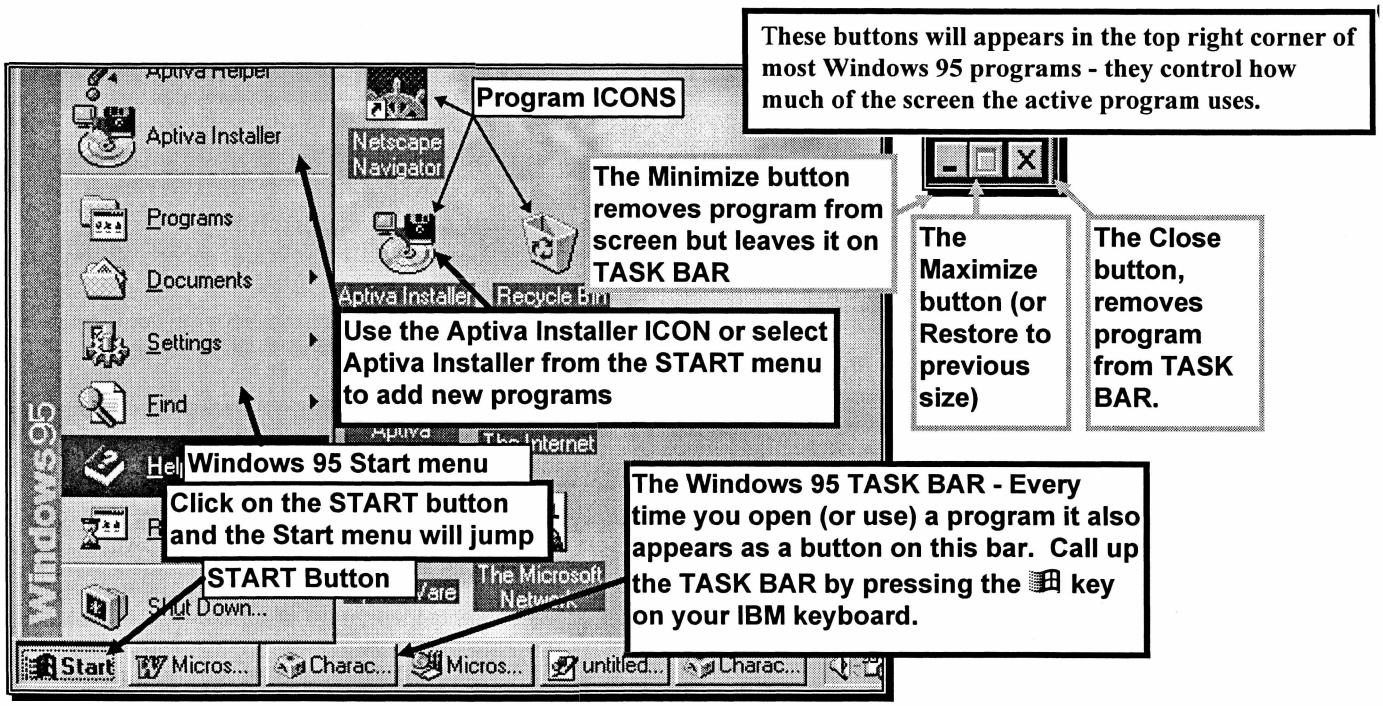
Windows' Stated Requirements

- *386DX or higher microprocessor*
- *4MB total memory (8 recommended)*
- *One high-density disk drive*
- *35-40MB of space on a hard disk*
- *VGA or higher resolution graphics card*

Realistic Requirements

- *At least a 486DX; , a Pentium is better still*
- *8 MB total memory; 16MB is better*
- *One high density disk drive*
- *100MB of space on a hard disk; 750 MB is better still*
- *Super VGA *800 x 600 resolution) card and monitor*
- *Required: mouse - Microsoft-compatible; modem/fax modem; audio card/speakers*

A Typical Windows 95 Window


These buttons will appears in the top right corner of most Windows 95 programs - they control how much of the screen the active program uses.
Program ICONS
The Minimize button removes program from screen but leaves it on TASK BAR
The Maximize button (or Restore to previous size)
The Close button, removes program from TASK BAR.
Use the Aptiva Installer ICON or select Aptiva Installer from the START menu to add new programs
Windows 95 Start menu
Click on the START button and the Start menu will jump
START Button
The Windows 95 TASK BAR - Every time you open (or use) a program it also appears as a button on this bar. Call up the TASK BAR by pressing the ⊞ key on your IBM keyboard.
Aptiva Installer
Programs
Documents
Settings
Find
Shut Down...
Windows95
Netscape Navigator
Recycle Bin
Start
Micros...
Charac...
Micros...
untitled...
Charac...

Here is an example of a typical window, dissected into it's various parts.

All windows are composed of these same parts, so once you learn one, you are set! Descriptions of how these parts function is described in the Windows 95 Tutorial.

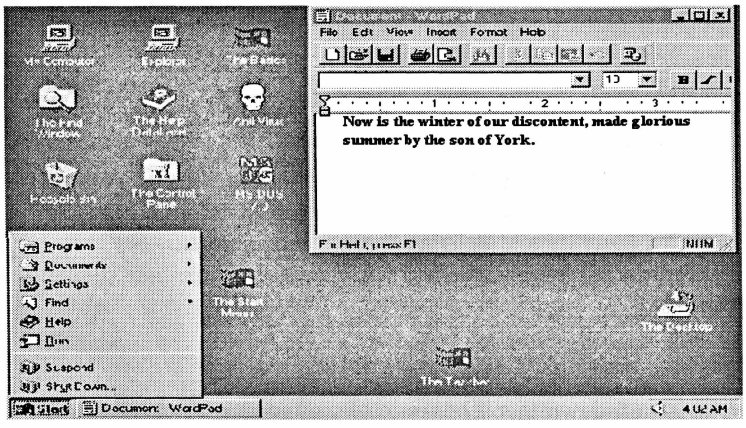
The Titlebar

The title bar is the topmost strip in any window. It lists the name of the program, as well as the name of any open file. For example, the title bar in our example comes from the Windows 95 Explorer. It contains the Hyper Terminal file. You choose a name for each file when you save it for the first time. The new filename then appears in the title bar.

Lying beneath the titlebar, the menu bar displays keywords that will drop the working menus. When you select a keyword in the menubar, a menu comes down, containing options related to that particular keyword.

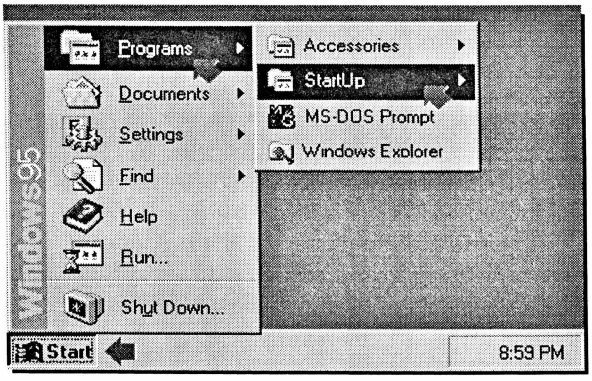
The Desktop

Windows allows the user to select programs, manage files, and even to run more than one program at a time. It all starts with the opening screen, called the DESKTOP.



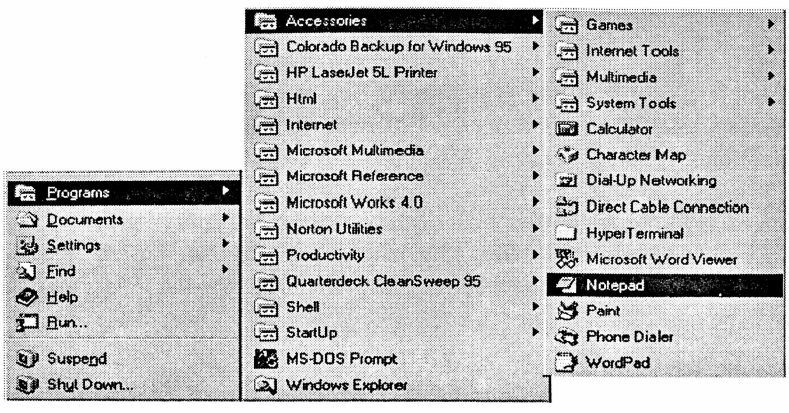
Depending on how your computer is set up, various items appear on your DESKTOP when you start Windows. Four that you will defiantly see are My Computer, Network Neighborhood, Recycle Bin and the Start Button.

PROGRAM ICONS can be found in the START menu and retrieved when needed. This is useful with your customer's more frequently used programs.



Programs Submenu

The PROGRAMS item on the START menu leads to a series of cascading submenus from which you can launch the various programs and applications on your computer. Every computer's PROGRAMS menu will be different, depending on what software is installed.



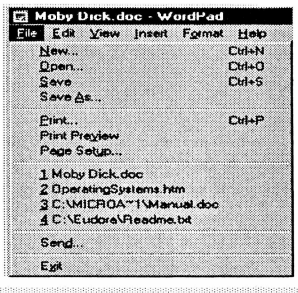
On these submenus, the items with a right-facing arrow to their right (such as Accessories in the example to the left) are folders containing other items. Holding your cursor over them for a moment will open up another submenu.

The items without the arrows (such as Notepad in the second menu) are programs and can be launched by highlighting them with the cursor and clicking (or just double click on the filename).

As your customer adds programs to their computer, they may find that the PROGRAMS menu becomes large and awkward. They will eventually want to customize it to better meet their needs.

An easy way to open the PROGRAMS menu for customization is to right-click on the START button and select EXPLORER from the context menu. Click on the plus (+) sign to the left of Programs and highlight Programs to open that folder. From here your customer can create groupings that make sense to them. Do they really need a bunch of folders with names like Blahblah Software, each containing a link to one program, or would it make sense to create their own folders, grouping similar programs together and deleting these unnecessary folders? In a short amount of time they can have a quicker, leaner, kinder, and gentler Programs menu.

Menu Boxes



Windows uses pull down menu boxes to allow the user to choose the options available. Clicking the mouse on the menu item displays the box, from which the appropriate item may be selected. (If you don't know how to "mouse", be sure to complete the mouse portion of the Windows Tutorial.)

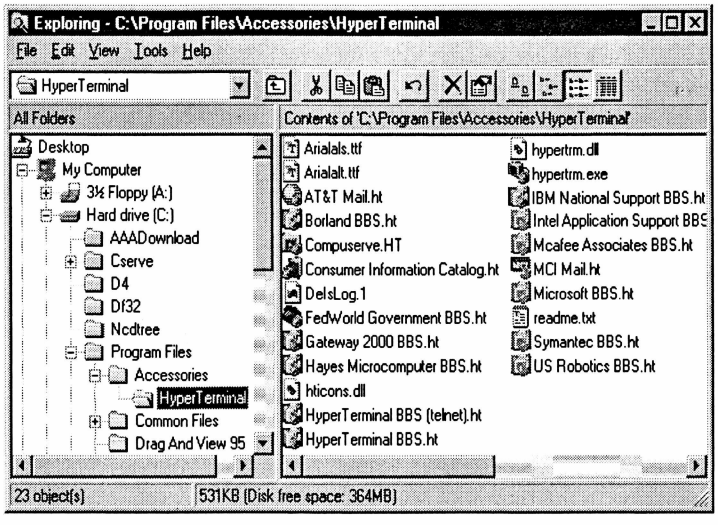
Notice that the FILE menu box has been pulled down in the illustration.

Windows 95

Prior to the use of graphical user interface programs, managing and arranging files in a manner that allowed them to be easily viewed and accessed was a difficult task. Programs and their associated files were usually stored together in a group called a directory. The user was required to ask for a listing of files in each of the directories and could only access files available in that group.

Windows 95 has a program called EXPLORER. This tool can be found on your Start menu under Programs.

Selecting a program under Windows is simple. Just move the pointing device to the desired program and click the left mouse button twice in rapid succession. (This is called "double clicking.") When the EXPLORER is displayed, it will look like the illustration.



Now the information in files and folders is displayed in a format called a **tree.** The graphical tree in the window on the left side of the screen gives us the name of the folders on the hard drive. You will notice that the folder Hyper Terminal is highlighted (it has a little box around it's name). The window on the right side of the screen displays all the files and sub folders which make up that folder. To peek inside a folder while in EXPLORER, click on it's name on the left side of the window. You see two things; that folder's next level of folders (if it has any) appear beneath it on the left side of the window, and that folder's filenames spill out into the right side of the window. When a new folder is selected by using the pointing device, the corresponding files are displayed on the right side of the screen.

More than one window may be open at a time, allowing the user to look at more than one folder or storage device and copy, delete or move information between them. Instead of learning a complex command structure to accomplish these routine tasks, the user can simply select the file or folder they wish to use, and select the desired task from the items on the menu bar.

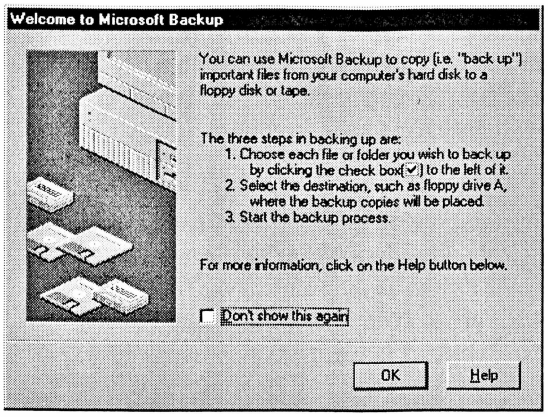
Running Windows Applications

Windows 95 comes with two very important applications; Recycle Bin and Backup. These programs can be life savers to you and your customers.

Microsoft Tools

Sooner or later, your finger will press the Delete key at the wrong time, and you'll delete the wrong file. Don't panic, just double click on the Recycle Bin.

The Recycle Bin is really just a special folder where Windows stores your recently discarded files and other icons. The files listed in the Recycle Bin can be brought back to life simply by dragging them out of the Recycle Bin box: Use the mouse to point at the name of the file you want to retrieve and, while holding down the mouse button, point at the desktop. Then let go of the mouse. Windows 95 moves the once-deleted file out of the Recycle Bin and places the newly retrieved file onto your desktop.


Welcome to Microsoft Backup
You can use Microsoft Backup to copy (i.e. "back up") important files from your computer's hard disk to a floppy disk or tape.
The three steps in backing up are:
1. Choose each file or folder you wish to back up by clicking the check box[✓] to the left of it.
2. Select the destination, such as floppy drive A, where the backup copies will be placed.
3. Start the backup process.
For more information, click on the Help button below.
Don't show this again
OK
Help

Data loss is a fact of life, and another potential tragedy, in computer land. Backing up your files safeguards them against loss, should the hard drive crash. By using Microsoft Backup, your customer can be protected from those unexpected, but all too frequent, acts of nature known as "unrecoverable read errors.

You can backup data in three ways: full backup, incremental backup, and differential backup. A *full backup* backs up all the files that you select before starting the backup. An *incremental backup* backs up all those files you have changed since the last full or incremental backup. A *differential backup* backs up only the files that have changed since the last full backup.

For a backup strategy to be effective, you should instruct your customer to back up their data in regular cycles. Be sure to impart to your customer the importance of backing up their hard drive, and make sure they understand how the Backup program works.

By knowing these two applications and thoroughly explaining their benefits to your customer, you can save yourself countless hours of grief and aggravation in the future.

Multi-Tasking

Most programs today are written to take advantage of Windows basic command structure. Because of the sharing nature of Windows, you can run more than one of these programs at a time. This is called **multi-tasking**. Multi-tasking is a term customers will often confuse with multi-user. Multi-tasking is the computer's ability to run more than one application simultaneously. Multi-user refers to a system's ability to allow more than one terminal to access information on the system at the same time.

In this illustration, the user is displaying a presentation and a database simultaneously.

This is a highly desirable capability for people who do work involving the use of more than one program, such as a business person who uses a spreadsheet for accounting and forecasting, but needs a word processor to write memos or proposals. The display area for each window can be sized to allow the user to display the information in any convenient manner.

Windows allows the user to share information between two files, so that text entries from the text document in one window could be copied to the spreadsheet of the other. Or information from the spreadsheet could be copied to the document.

In addition to opening multiple documents, Windows can open more than one program at a time. This allows the user to view or share information from one application to the next at will, if the programs are written under the Windows operating environment.

One of the major advantages of Windows is that operation of different Windows programs all have a similar "look and feel." This reduces learning time. It is a major customer benefit, and just one of the reasons we offer Windows with our computers.

Review

1. MS-DOS stands for: _____ _____ _____ _____.
2. GUI stands for: _____ _____ _____.
3. Windows 95 is an operating system. True False
4. Windows 95 will run on a computer with 2MB of RAM.
   True False
5. You can find the icons for all of your programs in The _____ _____.
6. Deleted files can be found in the _____ _____.

Running Non-Windows Applications

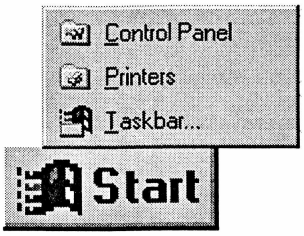
Many users of our advanced computers have owned a computer before. They often have accumulated software that meets their needs, but which was not written for the Windows environment. Windows 95 will allow the user access to many of the convenient features of it's environment with these older programs.

ICONS for non-Windows applications can be displayed and the application can be loaded from the Start menu. Some can even be enclosed in a window of their own to be displayed side-by-side with other applications.

Windows will even allow limited information sharing between non-Windows applications. Simple text can be retrieved from one document and exported to another.

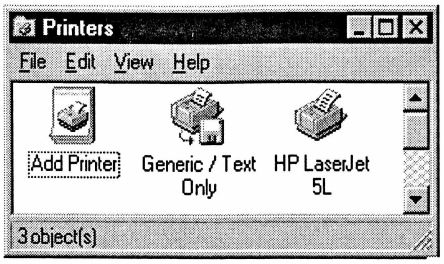
Setting up Peripherals

A key element for successful Windows operation is the setting-up of peripheral devices. Windows 95 controls the functions of printers, CD-ROM devices, sound boards and many other items through the Control Panel (click on the Start button, choose Settings and click on Control Panel).



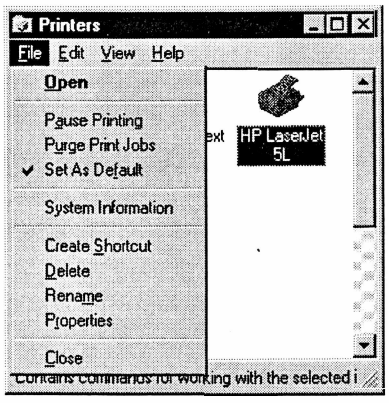
Computers use sub-programs called "drivers" to control peripheral options. The appropriate driver for each device must be selected. Windows will diagnose the various devices installed in the computer when Windows is first installed on the system, but devices added after that time must be added to the set-up functions.

The first problem that most computer customers have is how to set-up their printer driver. This is done by accessing PRINTERS under the Control Panel from the Start button.



After highlighting the correct printer, double click on the Printer's name. After the installation is complete, click on the new printer's icon and choose Set as Default Printer from the Window's File menu. Now you (or your customer) are ready to go!

To install a printer, double click on the ADD PRINTER icon. Scroll through the list to find the name of the printer you are connecting. (If your printer isn't listed in the master list, look for the printer it emulates. Check in the printer instruction manual for the reference. You can choose as many printers as you want and see which one works; Windows doesn't mind.)



For increased customer satisfaction and convenience, you should do the printer setup before the customer takes the system home. This added service will really help your customer and prevent early printer problems.

The Windows 95 Tutorial

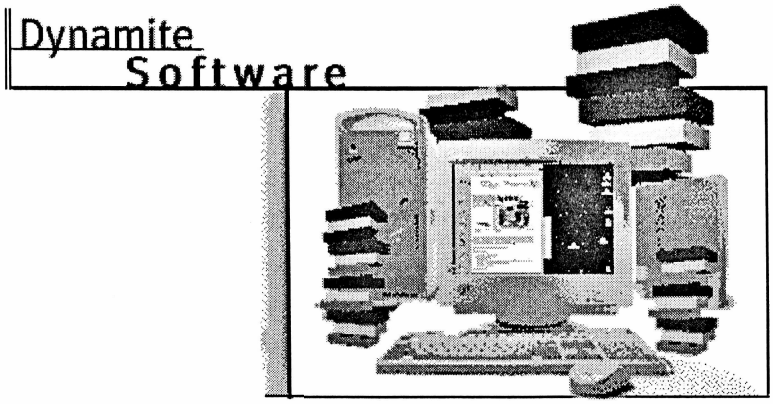
Microsoft Windows 95 is a valuable, flexible element in our line of Name Brand computers. It offers the customer maximum control through an easy to use interface. Special help screens guide the user through procedures whenever they encounter a problem or want to try something new.

Your best vehicle for learning the basics of Windows' features is to take the tutorial included with the program. The Tutorial can be accessed through the HELP pull down list box from the START button. Knowing Windows basics is critical to your success in selling computers.

Complete the tutorial prior to taking the certification test. Questions from the current version Windows tutorial will be part of the examination required for your certification.

Chapter 9 Multimedia Software

Multimedia software, as contained on a CD-ROM disc, is all about content delivery and complex, interactive programs and games. A single CD can hold more than 600,000,000 bytes (600 Megabytes) of information and program instructions.



Microsoft Encarta 96™ is an example of multimedia software. A printed copy of the encyclopedia would require many volumes. While it would be possible to print illustrations in color in the bound books, without another media (such as a cassette or audio CD) there would be no way to give audio information, such as recorded sections of an important presidential address, samples of music by classical composers or sound effects. These are all capabilities of the multimedia form of this product.

The single CD of Encarta 96 contains all of the text of the bound version together with hundreds of illustrations (some with motion animation) and over one hour of audio. And all of this information is included on one CD.

Before CD-ROM, many programs were input based. An example would be a family budgeting or business accounting program. The software package would contain the program and instructions, but for the program to be of practical use, the operator had to put in the relevant data, such as checkbook entries or sales activity.

While these types of applications are sure to continue in the computer marketplace at an ever increasing rate, many users have a strong need and desire for programs which will supply huge amounts of information. The personal computer is the ideal device for using this large base of information, since simple instructions can be given to search for, sort and apply the information for its intended use.

Educational programs are on the cutting edge in the use of Multimedia computers. Some of these programs include foreign language instruction, music appreciation, and interactive learning programs in mathematics, language arts, social studies, history, art, science and literature. Virtually every discipline of study on every level has been touched by this technology.

Real Time Motion

Advanced standards for video display in Multimedia computers combined with large capacity standards in memory and storage give multimedia computers the ability to run real time animation with accompanying sound.

Multimedia presentations give the user the ability to develop programs using sophisticated motion graphics and combine them with actual recorded digital sound for dynamic productions.

Interactive Programming

Because of the large capacities available in Multimedia computers, programming can be more interactive. This is possible because so much more information can be accessed by the larger memory and storage.

Learning experiences with Multimedia computers allow a language student to hear a word or phrase, practice its usage and even record their own voice and play it back, comparing it to the sample from the program.

Programs like the Voice Navigated Home Director actually allow the user to give their computer verbal commands, and watch those commands be accurately executed.

All of these features make Multimedia computers an exciting, state-of-the-art technology for the home user, educator or business person.

Chapter 10 The Local Area Network (LAN)

Resource and information sharing is becoming common in education and the workplace. Many businesses and schools find that the ability to use central file storage and to use advanced peripherals such as laser printers and CD-ROM devices can be achieved through a Local Area Network (or LAN) at a fraction of the cost of duplicating expensive equipment or programs throughout the facility.

Chapter 11 Top 10 Customers Boo Boos And How to Fix Them

1. ***"My Printer won't work."***

   Make sure that the correct driver is loaded (see Setting Up Peripherals, p. 33 for details) and the correct cable was purchased. Also have the customer check the cable connections and make sure the printer is on-line.

2. ***"My monitor looks all funny."***

   Make sure the customer has the correct driver (see Setting Up Peripherals) for their monitor and that they have the resolution set correctly. The resolution settings are found in the Control Panel's DISPLAY Menu. Check the manual for the monitor for the correct resolution setting.

3. ***"The TASKBAR keeps disappearing!"***

   The TASKBAR is a handy Windows 95 program that's always running... if you can find it. If it vanishes from the screen, here are a few ways to bring it back. First, try holding down the CTRL key and pressing ESC. Sometimes this makes the TASKBAR appear, but sometimes it only brings up the START menu.

   Still no TASKBAR? Try pointing at the very edge of your screen, stopping for a second or two at each of the four sides. If you point at the correct side, some specially configured TASKBARs will stop goofing around and come back to the screen.

4. ***"My window disappeared, but I had it just a minute ago."***

   Windows works more like those spike memo holders than like an actual desktop. Every time you open a new window, you're tossing another piece of information onto the spike. The window on top is easy to see, but what's lying directly underneath it? If you can see a window's edge protruding from any part of the pile, click on it. The window magically rushes to the top of the pile. If you can't see any part of it, it's time to call in the TASKBAR. To call up TASKBAR, just look at the bottom of your screen (or see #3). You will now see a list of programs. Your missing window is *somewhere* on the list. When the name of your window is highlighted, press ENTER. The TASKBAR instantly tosses your new-found window to the top of the pile.

   Another way to find an open program is to hold down the ALT key while pressing the TAB key. When you see the icon for your missing window, just release the ALT key, and your window is now back on top!

5. ***"I deleted my presentation that's due tomorrow."***

Remember the RECYCLE BIN? Now is the time to remind your customer about this valuable application.

6. ***"All I get is a C>; Where-o-where has my Windows gone?"***

This problem may be bigger than a phone call can handle. Have the customer type WIN at the C> and see if Windows reappears. If so, they probably just exited a DOS program and forgot where they were. If not, it's time to call in the cavalry. Ask your manager for help (or grab a DOS manual and brave these new waters yourself).

7. ***"Unrecoverable Read Error on Drive C."***

You were warned about those quirks of nature, and here it is! We will hope that the customer has recent backups of their hard drive. If so, all that has to be done is RESTORE, and all the files will be reloaded. If not, it's back to the drawing board for them.

8. ***"Memory Allocation Error."***

The customer has too many applications open at the same time. At this point, they have two options: 1-buy more RAM; 2-close some of their applications so the apps they are using have room to move around.

9. ***"I added some Shortcuts to the START Menu, but they aren't here now!?"***

You can drag-and-drop Shortcut icons for the programs that you use the most onto the START Button. This adds the icons to the top of the START Menu. That way, you don't have to work your way through the cascading menus to find your favorite programs. However, if you place too many items on the menu, it might get too long to fit on the screen and the top items won't show.

To fix the problem, open the START Menu, and choose Settings, Taskbar. Click the START Menu-Programs tab and the Advanced button. In the EXPLORER window, drag the excess items from the START Menu folder and drop them in the PROGRAM folder. Now your START Menu should be completely visible.

10. ***"Insufficient Memory to run Application."***

This phenomena is related to how many Terminate and Stay Resident (TSR) programs your customer has. This software loads and then hangs out in the computer's RAM memory. Some TSRs are drivers; others are actual programs. DOS looks at two setup files, AUTOEXEC.BAT and CONFIG.SYS to see which TSRs it should load. Sometimes TSRs fight each other for memory space, and this causes the problem. Tell the customer to have only those programs resident that they absolutely have to have. Ask for help or call or call 1-800-2-TANDY 4 if you can't solve the problem on your own.

Chapter 12

Selling Computers

The 6 Stages of Selling

1- Preparation

2- Greeting

3- Qualification

4- Demonstration

5- Close

6- Follow-Up

The Computer Sales Cycle

Step 1	Preparation
Step 2	Approach
Step 3	Greeting
Step 4	Warm-up
Step 5	**Qualification**
Step 6	**Presentation/Demonstration**
Step 7	**Merchandise**
	Motivation
Step 8	**RadioShack Benefits**
Step 9	Trial Close
Step 10	Overcoming Objections
Step 11	Close
Step 12	Turn-Over
Step 13	Final Close
Step 14	**Follow-Up**

Note the order of Steps 5-8. When selling computers, the associate has to understand more about the needs and desires of the customer, **prior** to giving a demonstration, than for other products. It is also important to explain the value-added benefits of buying from RadioShack, **prior** to a demonstration, to establish yourself as a viable vendor for computer products.

As important as Steps 5-8 are to selling a computer, Step 14 (Follow-Up) is most critical to **keeping** a computer sold. The majority of customers, especially those who are novices, encounter a problem within two weeks of purchase. If the associate is in contact with the customer, most problems can be quickly resolved before they become frustrated and the likelihood of the system return increases.

Computer Customers

There are basically three types of computer prospects who will come into your store. These types are:

1. someone who wants a personal computer for personal use
2. someone who wants a personal computer for business use; and
3. someone who wants a personal computer for education or games.

Your first job is to determine which of these three types fits your prospect. If your prospect fits more than one type, determine which type is dominant and work from that basis.

Qualifying Questions

There are five basic qualifying questions which must be asked regardless of the prospect type. They are:

5 Basic Qualifying Questions:

1) Will you be using the computer or will someone else?

2) Have you ever used a computer before?

3) What do you want to do with your computer?

4) How much can you afford to invest, per month, on a computer system?

5) What other computers have you looked at or are thinking about looking at?

"Will you be using the computer or will someone else?" It's important to know who qualifying questions are to be directed towards. Meeting the user's needs is important to close the sale. If the computer is for a child, don't discount the buyer's perception of the child's needs.

"Have you [Has (user)] ever used a computer before?" This establishes the prospect's basic understanding of computers and their uses.

"What do you (or they) want to do with your computer?" If there is more than one reason, make a list and have the customer rank the uses. Suggest broad categories like Personal Finances or Record-keeping, Entertainment, Education or Work-related Activities. If the prospect is uncertain of all the uses, suggest a few. In the case where the prospect has no idea of the kinds of things a computer can do, a short Windows demo or a run through the tutorials can stimulate the thought processes. Be sure to let the prospect use the keyboard and mouse to perform some activity to become more comfortable with the computer.

"How much did you want to spend on a computer system?" OR "How much can your afford to invest, per month, on a computer system?" It is essential to determine how much the prospect is prepared to spend and how quickly the purchase will be made. You must determine how the prospect will finance the purchase. Applying for an RSVP credit card will go a long way in helping you close the sale.

Remember, *You don't have to wait until the prospect makes the buying decision to apply for an RSVP card. Invite the prospect to apply early in your initial conversation, then if the sale takes more than one visit, the prospect has the ability to complete the sale immediately.*

Most of the time, a prospect will be more willing to buy accessories or supplies if the purchase is charged than with cash. Even if the prospect has other credit cards, by having the RSVP card the prospect saves their other credit lines for other purposes, and it increases the chance that the prospect will return to your store to buy supplies and other computer products.

"What other computers have you looked at or are thinking about looking at?" Ask them what features they like about the computers they have seen or heard about. This gives you a good idea of what things are important to the prospect. Many competing brands are using photoscanners or built in Zip drives to make their machines "special." All of these accessories are available to our customers from RSU.

These are not the only qualifying questions you must ask, but they are the most important ones. These questions are very straightforward and simple for most prospects to answer. Beyond these questions, you must determine the underlying buying motivations and justifications that may not be as obvious, even for the prospect.

Why Do People Buy?

People buy for emotional reasons, but they must be able to justify those reasons with logic to feel comfortable with their buying decision. The emotional reasons are responsible for impulse buying. Computers, however, are rarely impulse items. You will have customers who want to buy just because they want to, but they struggle to find a reason to justify that emotional need. For most of our home users (average income $45,000), it's a real financial sacrifice! It is up to you to recognize their needs and to find the logical reason which permits the fulfillment of the emotional need.

Start with the identification of a general motivation. There are four general motivations for buying a personal computer. The four are curiosity, vocational use, personal productivity, and personal improvement. Here are some of the questions that must be asked to ascertain which buying justification or combination of justifications are present.

CURIOSITY in potential uses for a computer. This prospect may indicate no knowledge of computer usage, but is open to the possibilities. This prospect may not be initially predisposed to buy. Until they have some logical focus on computer applications, they will remain only curious, not convinced.

Ask these qualifying questions:
Have you ever used a computer/considered using a computer?
Have you ever thought about how a computer could improve your child's school performance?
Have you wondered what things a computer can do?

VOCATIONAL USES both to enhance and improve career. This may include the person who wants to work at home or who may be considering starting a business at home. Consider that the older prospect may be hesitant to admit being intimidated by computers? Learning about computers at home, in privacy, may be less threatening.

Ask these qualifying questions:
What job-related things could you do at home with a computer?
Would a home computer help you with your work schedule?
Would computer knowledge improve your career opportunities?

PERSONAL USES to assist the busy person with day-to-day activities. These uses should be extended to other members of the family.

Ask these qualifying questions:
Is your bank set-up to handle computer-transmitted transactions?
Have you thought about using a computer to track your personal expenses, tax records, home inventory?
Would you like to be able to access information services for stock-quotes, up-to-the-minute news, and shopper services?
Have you ever read about people using their computer to control their household utilities and home security?

PERSONAL IMPROVEMENT activities become more important to people as they become more comfortable in their vocational pursuits and family situation. These activities also become more significant when job or family situations change drastically, like divorce or job loss.

Ask these qualifying questions:

Have you thought about staring your own business/pursuing a new career?
Have you ever noticed that jobs requiring computer expertise generally pay more?
Have you ever wondered if a computer could help you become organized or productive?

The most important part of asking questions is listening to the answers. Otherwise, asking is useless. Listen to more than the words, listen to the way the words are spoken, body language and interaction between customers.

The Personal Computer Prospect

Be sure to include other family members when you ask questions.

The prospect who comes into the store to look at computers has already made one critical decision. He or she considers RadioShack to be a credible vendor to buy from, or else they would not be there. The decision of whether or not you are a credible salesperson to buy from has not been made. Therefore, follow these steps to make sure that the decision is in your favor.

Ask qualifying questions that solicit the best information in the shortest period of time. Don't rush to demonstrate the computer before you qualify the prospect. This will prevent you from spending time demonstrating one computer only to find out another computer will better fit the needs.

Once you determine the prospect's needs and interests, only demonstrate or talk about features that address those needs and interests. Many times, it is not necessary to demonstrate at all. Just talk benefits and show output.

1. Consider not only the prospect's current needs, but future ones also. Show prospects that you are looking out for them. It makes you look more professional.

2. Always include the supplies necessary to get started and TSP coverage. Doing so helps prevent customer frustration and increases customer satisfaction. Selling TSP shows the customer that you want to protect their investment.

Personal Computer Prospects:
Buyer Categories/Motivations

All personal computer buyers fit into one of four categories. Each of those categories have natural motivations which you need to explore to build a foundation for your close. The following are some questions for each prospect/customer category:

Prospect with child(ren)
MOTIVATION:
Education/success

Is your child using computers in school?

NO: What grade is your child in? Have you considered the impact of computers on your child's education?

YES: Have you thought about the benefit to their continuing education by having a computer at home?

Do you own an encyclopedia?

NO:

Do you plan on getting one?

YES: Have you considered how soon any encyclopedia will become outdated? Did you know that a computer can give your child access to an on-line encyclopedia that is never out-of-date?

NO: (Too Expensive) I'm sure that part of the reason is the fact that they become outdated quickly, correct? On the other hand, a computer can give you access to an on-line service that is never out-of-date, plus your child has the opportunity to expand his/her computer knowledge. With encyclopedias costing around $1200, that's almost as much as an entire computer!

YES: When did you buy it?
(DATE) A good investment then, but did you know that a computer can give your child access to an on-line encyclopedia that will never become outdated?

You can guide the response to these questions if you do your homework. Find out which schools in your area have computers and in which grade levels. If you know more about your prospect's school than they do, you can plant seeds for thought. Remember, every parent is concerned about their child's success in school. You can help them assure this success.

Young professionals
MOTIVATION:
Status, career advancement

Do they use computers where (either of) you work?

YES: Do you use a computer? Are you using the same software at home?

NO: Have you considered having a computer at home? or How would you benefit, having a home computer?

NO: Have you considered getting a computer to learn on at home? Would it improve your opportunities on the job?

NO: Have you considered learning to use a computer?

YES: How about learning on one at home? Could you see yourself using one in the same way? Or maybe in other more innovative ways?

YES: Wouldn't you like to be the first to show off your computer skills to your friends?

No: Do any of your friends (peers) have a computer at home?

Older Professionals
MOTIVATION: Curiosity, self-improvement

Do you have computers at your business?

YES: Have you considered the advantages of having a computer at home?

NO: Are you familiar with some of the personal uses of computers? Let me show you some of the uses and how easy it is to run one.

Retired Persons
MOTIVATION: Curiosity, free time, second career, shared interests with grandchildren

What hobbies do you have? or What do you do with your spare time?

(COLLECTING THINGS) How do you keep track of them? Would you like to be able to maintain an easy-to-use filing system to keep track of your collection? One that would help you keep track of purchase dates, value and other details unique to each one?

(CLUBS or ORGANIZATION ACTIVITIES) You must keep a very busy schedule, right? How do you keep track of your activities now? Have you ever served as an officer, like secretary or treasurer? Would you like to see an easy-to-use system to keep a personal calendar and also be able to help your organization to improve it's business activities?

(INVESTMENT ACTIVITIES) How do you keep track of all of your investments now? Wouldn't you like to have more control over the

details of your investments? Let me show you some ways to do that with a computer. I can even show you how the computer can be an investment, one that pays for itself.

(GRANDCHILDREN) Would you like to be able to share an activity with them that is fun and educational at the same time?

NOTE: *Reinforce the shared interest concept. Stress educational programs over game programs. Educational programs are more accepted because they represent a constructive use of a child's time rather than a frivolous one.*

Personal Decision-Making Process

Because computers are more expensive than almost all other products in your store, it is important that you find out how the buying decision will be made and by whom. Don't discount opinions of spouses, children, friends, relatives, and peers. It may be a family decision, with the children playing a big role, or it may be the decision of only one person. This is not easy, but attempting a trial close as soon as is possible will help you determine how the decision process will work.

It's even possible that the decision will be made by someone who is not even present (spouse, peer, friend, etc.). The best way to determine this is to ask, "Who, besides yourself, will be involved in your decision to invest in a computer?" Encourage the prospect to bring that person in as soon as possible, or offer to call them.

Remember the buying motivations of the prospect categories. Keep in mind that the decision to buy a personal computer, like other buying decisions, is more an emotional decision than it is a logical one. But you must provide the logical reasons people use to justify an emotional decision. Without logic, the customer is more likely to suffer buyer's remorse.

Personal Selling Time Frame

In a majority of cases, the decision to buy a personal or home computer is immediate. It can happen on the first visit. At most, the decision may be made on the second visit, but the longer it takes the more your chances for closing decrease.

- You must qualify as quickly as possible;
- You want the customer to apply for an RSVP card; and
- You want the customer to become emotionally committed to the computer as soon as possible.

Business Computer Prospects

The business computer prospect who comes into your store has somewhat different motivations in mind than the person looking for education or entertainment. It is important to establish two things as soon as possible:

1. What is the nature of the business? By understanding the business, you can better provide a solution to meet the business needs.

2. What is the size of the business? Determine if this is a business to be run out of someone's home, or if it is located in a traditional office setting. This makes a difference when selecting the computer. This information will also help to establish the financial alternatives; and at this point ask the same qualifying questions that you would ask a personal computer prospect.

Business Computer Users

Every business has common job classifications. To fit the needs of the business, determine which job functions can be improved by computerization. Keep in mind that each of the following job classifications may be filled by one person or more, or that more than one job can be held by one person.

They are:

1. Office skills
   - A. Administrative
   - B. Clerical

2. Management
   - A. Information processing/Personal management

3. Sales
   - A. Retail
   - B. Wholesale

4. Professional
   - A. Information processing
   - B. Skilled trades

Business Computer Buyer Motivations

The business computer prospect is motivated by individual and organizational needs as they relate to the business.

Individual Needs:	Organizational Needs:
Money	Productivity
Achievement	Economy
Power	Reliability
Recognition	Convenience
Security	Control
Flexibility	

The sale will be closed if you can meet both of these needs. Consider the individual needs to be the emotional reasons and the organizational needs to be the logical reasons used to justify buying. You will hear the organizational needs verbalized, but be aware of what needs can be met by the individual.

Business Selling Time Frame

The decision to buy a business computer system ordinarily takes longer than a personal computer decision. It can also be more complicated and require products and services you cannot provide. Because you will spend more time with this prospect, it is important that:

- the business needs are thoroughly understood;
- the prospect is familiar with RadioShack's leasing program; and
- you seek any additional help you need to correctly recommend a solution.

Business Decision-Making Process

The decision-making process in a business can be more difficult to determine than a person buying for the home. It is best to find out what that process is as soon as possible. You must also find out if the person who is in your store is a decision-maker or someone who will influence the decision. The question of finance becomes less one of cost and more of process. To help your progress, ask if a budget has been established for the solution. If your prospect has indicated that they are the decision-maker, attempt a trial close to see if it is true. Also explore what financial alternatives may better fit the company's needs.

Review

1. The Stage of selling most critical to keeping a computer sold is _____.

2. There are _____ basic qualifying questions to ask computer customers.

3. There are 4 general motivations for buying a personal computer. They are: _____, _____, _____, _____.

4. The business customer is motivated by both _____ and _____ needs.

Demonstration

Whether your prospect is looking for a personal or business computer, before starting a demonstration, you must know:

1. *prospect's general interest level;*
2. *one or two specific computer application interests;*
3. *ability to and interest in purchase; and*
4. *decision-making process.*

It is critical that the prospect become involved in the demo and can relate to computer usage. Everything you do must relate to the prospect's needs, opinions and insights. Otherwise the information is interesting but not important to the prospect. <u>If it is not important to the customer, you can't sell it!</u>

The Demonstration

Ask the customer to use the mouse. Be sensitive to computer fear. Share the mouse at first to ease the prospect into the demo. Help them to <u>own</u> the computer in their mind. If the child is present, let them interact with computer.

1. Have the prospect come up with the justifications and uses for the computer. They will sell themselves if you let them. Let the child sell the computer for you.

2. If selling to a couple, concentrate your questions and attention on the one most interested. That person will help to sell their partner.

3. Only demonstrate those applications that specifically relate to the prospect's interest. Keep it short and to the point. You are not showing off your computer skills. You are empowering prospects to develop their own.

4. Show the prospect the ease of use, power and fun of computers. It will make the close much easier.

The Close

At any point in the demonstration, if the prospect gives you a buying signal, stop and close. Examples include:

- Do you have service contracts to cover repairs?
- Do you have a lay-away plan?
- What programs do you have that will (fulfill a function)?
- Where would I take the computer if I had a service problem?
- How long is your warranty period?
- Do you have these in stock or would I have to wait to take it home?
- How long would I have to wait to get approval on your credit plan?

With every sale, be sure to include:

TSP
- it protects the investment; and
- takes guesswork out of true cost.

RSVP/SLC
- saves current credit lines
- makes future purchases easy; and
- tracks computer-related expenses.

Ask closing questions like:

- Would you want to take it home today or have it delivered tomorrow?
- What type of applications programs would you like to have for your computer?
- Would you like to fill out an RSVP application?
- Do you want the _____ or _____ program?

AND DON'T FORGET:

- All cables
- All supplies - paper, diskettes, etc.
- All accessories - modem, printer, furniture.

Follow - Up

The follow-up is critical to keep a computer sale sold, especially if the customer is a computer novice. Be sure that you do the following:

The Follow-up is critical to keeping a computer sold!

1. **Make a care call!** Check back with your customer, by phone, at regular intervals to see how they are doing. Don't be afraid to find that all is not well. It's better to find out early, when there is still time to fix the problem, than to find out the day your customer brings the system back.

2. **Anticipate an upgrade!** Keeping up with your customer means that you know when they are ready to upgrade to another computer or to another application package. Anticipating your customer's needs makes you a hero in your customer's eyes and will bring you referral sales. Happy customers always talk to their friends.

3. **Provide a source for technical questions to be answered!** Give your customer the telephone number of Fort Worth Customer Service and the IBM PC Help Center.

4. **Don't try to support the sale yourself!** Use the IBM number to help your customer. They are trained to do this and can provide more services than you can. Your time is selling time. As long as you are the source to get the help the customer needs, it doesn't have to be you who provides it. You are still the hero.

The Non-Computer Prospect

Bridge Questions

Consider every customer who comes into the store to buy another product as a likely prospect for a computer. Maybe that person doesn't know that you carry computers or just hasn't taken the time to explore their uses. Think about the ways you can stimulate their interest enough to move them from one product area to the computer product area.

Do it with bridge questions like these:

STEREOS/SOUND SYSTEMS

Do you collect tapes/records/CDs? Do you keep a written listing? Would you like to be able to maintain an easy-to-use filing system to keep track of your collection?

VCRs/CAMCORDERS/ TELEVISIONS

Do you have a collection of tapes? How do you keep track of them? Wouldn't it be great to have a filing system to quickly check what tapes you have, one that could be easily updated?

AUDIO/VIDEO TAPES

Do you collect tapes? How do you keep track of them now? Wouldn't it be helpful to have a system for tracking what tapes you have, one that could be easily maintained?

CELLULAR PHONES

Will you use this phone in your business?

YES: How would you like to be totally portable and be able to take your information systems, like customer files or reference data, with you too?

NO: Would it be useful to have your telephone listings and personal calendars with you too?

TOYS

How old is your child(ren)? Do they use computers at school? How about a gift that improves achievement in school, now and in the future?

ELECTRONIC PARTS

Do you like to tinker with electronic products? Are you curious about the latest in electronic technology? Would you like to see the very latest?

BATTERIES...??

Come up with your own questions. (Hint: "What are these batteries for?" If cassette player, SEE AUDIO TAPES questions. If toys, SEE TOYS questions.)

Chapter 13

Why RadioShack?

As a consumer why would you purchase a Name-Brand computer or printer from RadioShack? If you can't answer that question, you are at a selling disadvantage. Why? Because your customers will always be able to find a cheaper computer somewhere else, that seems, on the surface, to meet their needs.

There are five reasons why RadioShack is the best computer retailer in the market. And you need to talk

Proven leadership — In business since 1921 and in the computer business since 1977, RadioShack was the first company to mass-market a personal computer and continues to take a leadership role in the marketplace.

Electronics Specialization — In the consumer electronics business for over 70 years, RadioShack is in the business to stay. You can't do that unless you offer quality products year after year and unless you continually improve on that quality.

Experienced Sales Team — To provide the best solution for your customers, it takes a team. The associate is only one part of the team. It takes technical experts and responsive management ready to solve any problem, even before it becomes a problem. When your customers buy our products they are buying that RadioShack team. Take pride in your team and show that pride to your customers.

Prompt Service — Customers can be assured that, in the unlikely event their product purchase does need service, there are almost 7,000 locations in the United States to get that service. Customers frequently ask, "Where do I go for service?" You have the answer.

Product Selectivity — Each and every product available at RadioShack, whether private level or Name Brand, has been carefully evaluated before it is included in the product line. Our quality-control standards are the highest in the industry.

NOBODY COMPARES! Be sure your customers know that, and believe it. When prospects tell you that they are going to look at another computer at one of your competitor's shops, welcome the opportunity. Opportunity? Before they go, be sure they are armed with these questions:

"Where do I go to get service after the warranty expires?

and

Where do I go to get help if I move to another city?

When they get the answers to these questions, they'll be back!

Chapter 14 Making Product Comparisons

No retailer sells in a competitive vacuum for long. If there is sufficient market demand to support a product, competition is a fact of life. How you deal with customer's objections based on the competition, and their products or services is a key to a successful sale.

Asking Questions

A key area for you to explore is where they have shopped before coming to you. You can assume on a major purchase item, such as a personal computer, that your customer is likely to investigate more than one choice. Ask additional qualifying questions to discover what may shape their decision.

Ask your customers the following questions to help determine their priorities:

1. *Have you looked at other models or brands?*
2. *If so, what did you like about them?*
3. *What would you add to the other machines you've seen to improve their usefulness?*
4. *Do you have basic information on the machine for comparison? May I see it?*
5. *What was the price range of the equipment?*

We have described the advantages of doing business with RadioShack. But how do you compare the features and benefits of our products with competitive brands when there are so many possible combinations of features and benefits?

1. Sell what the customer needs. The approach of this training course has focused on asking questions on how the customer plans to use the system. No "generic solution" exists to suit every need. That's why we offer the diversity of models we carry at RadioShack.

2. Sell the value...not the price. No customer ever came into a RadioShack or any other store to buy a computer. They came to find a solution to a problem or meet a specific goal. Maybe they wanted to increase their personal productivity, or give their children the advantages of learning with the aid of a computer. Remember: when a customer goes in to buy a drill; they don't *want* a drill. They *want* a hole. A computer has only as much value as its ability to meet your customer's needs and desires.

Chapter 15

Financing Plans

RadioShack offers your customer convenient payment plans to make the purchase of their personal computer an affordable expense.

RadioShack Value Plus (RSVP)

RSVP is RadioShack's consumer financing plan. It is a revolving charge plan offering the individual buyer convenient monthly payments at rates competitive with other store proprietary credit cards. Your RadioShack store has applications for the plan. Review the application and the Store Operating Manual for the current procedures. RadioShack offers plans for our customers, such as limited time incentives at various times. Some incentives have delayed first payments or offer reduced or no interest financing for computer purchases. These plans are always announced to the store through your POS system and in your advertising information kits. Be certain your store manager gives you access to this valuable selling information and you know exactly where the information is kept for quick reference. RSVP is a consumer credit line. Businesses are not allowed to apply for this line of credit.

Sanwa Leasing Corporation

Sanwa Leasing Corporation offers a low-cost financing alternative for computer equipment. Leasing plans can even incorporate a provision for ownership of the equipment at the end of the lease term.

Your store has a complete Leasing Guide which outlines the program and instructs you on how to process the application and sale. Additional details are available in your SOM.

Customers who use SLC typically purchase more advanced systems with more options and take advantage of more support services than cash customers, since these items and services can be used now, and be allowed to pay for themselves over a period of time.

Know the details of leasing and present it to every business prospect - even if the customer tells you they intend to pay cash. Many customers who intended to write a check for the system find that leasing preserves capital and makes the purchase of the computer and necessary software a profit advantage from the beginning. Most prospects, however, will never talk about leasing unless you know and can present the advantages.

RadioShack Commercial Charge Accounts

A second business credit alternative is the RadioShack Commercial Charge Account. This account is intended for short term credit for businesses who wish to pay from an invoice. It is a common situation among large companies with branch offices who purchase equipment locally but process payment from a central office.

Very few computer sales should use this method. The terms of the account are payment within ten days, and administrative costs of the charge are absorbed by the store. Commercial Charge Accounts do have their place in computer sales, but be aware that the nature of the account limits that role.

RadioShack offers a range of support services on computers that is unmatched in the industry. They are part of the added-value story your customer needs to hear.

Chapter 16

Support Services

RadioShack Repair Services

The Repair Shop @ RadioShack Service Centers are conveniently located throughout the United States to serve our stores and customers.

Every one of our nearly 4900 neighborhood store locations serves as a drop-off point for repair services on most computers.

With our up-to-date technician training program, outstanding test facilities and mammoth parts inventory, no company can match the level of service we are prepared to give your customers when they encounter problems that require service.

We know that your customers will come to depend on their personal computer in many ways. That's why we are committed to bringing them the fastest, highest quality service available from any company. Your customers need to hear the store of fast, quality service from RadioShack. It's part of the value that comes with every machine we sell.

Computer Customer Service Line

IBM /RadioShack
Support
FOR STORES ONLY!

1-800-IBM-PROD

Authorization:
SELLAPTIVA

Pin:
SHAK

Over 40,000 times a month, RadioShack store personnel and their customers take advantage of RadioShack Computer Customer Service numbers to get the answers they need when considering a purchase or solving a problem.

THE FOLLOWING NUMBER IS FOR USE BY RADIOSHACK PERSONNEL ONLY AND IS NOT TO BE GIVEN TO CUSTOMERS!

Store personnel have a toll free number to call when you need assistance in helping a customer. Dial 1-800-2TANDY4 (1-800-282-6394). From a touch-tone telephone you will be given access to the representative you need by selecting the appropriate options from the telephone menu.

Phone numbers for customer support are listed in your SOM and should be posted at convenient locations throughout the store.

Product Support Library (Faxback)

The newest addition to our support system is the Product Support Library on CD. If your store has a a computer with a CD-ROM installed, you can use this library to find answer to many questions that arise in the store.

FAXBACK #
1-800-323-6586

There are areas dealing with RSU items, Name Brand parts items, computer solutions, and even making setup diskettes for many of our older Tandy machines. This disc also contains many of the important phone numbers you need to find answers from the home office.

If your store does not have a computer with a CD-ROM in it, your store will have the current FAXBACK catalog in the Store Reference guide. Take time to familiarize yourself with this valuable tool that will solve many of the common questions that arise on a day-to-day basis in your store. You can even give the FAXBACK number to your customers! Try FAXBACK. It is the best way to get help when you need it 24 hours a day! The toll free number is **1-800-323-6586.**

Chapter 17

Paid Support Services

RadioShack Sales Associates are paid commission on the sale of Tandy Paid Support Services in addition to the commission on hardware and software sales.

Many of these paid service sales carry an additional incentive SPIFF as well as the regular commission. Check the Store Operating Manual for the current commission rates and SPIFF (if applicable). They represent an opportunity for you to increase your earnings on every sale while you add value to the system and increase the customer's satisfaction.

Tandy Service Plans (TSP)

Today's personal computer is a major investment. Like any investment it needs the protection afforded by quality service at reasonable prices.

RadioShack's TSP (Tandy Service Plan) program ensures that any future repairs needed on their system are fully covered in their initial investment for the length of the agreement. And TSP customers get priority service at all of RadioShack's Service Centers.

TSP coverage for computers is written on an item-by-item basis. Prices for each item are listed on the Point-of-Sale System.

But for an item to be covered under a Tandy Service Plan, if that item is installed internally in a computer System Unit, the System Unit itself must also be covered.

Let's say a customer wants to cover the new CD-ROM drive they are installing in their personal computer. Since it is an internally installed device, the System Unit must also be covered under the plan.

A second customer wishes to add a new printer to their system. In this case, since the printer is an external peripheral, the printer alone may be covered.

Chapter 18

What's Next for You?

As you approach the end of this Certification Course, you actually approach the starting line - not the finish line.

Personal Computers represent an area of explosive growth and advancing technology. You will be challenged over and over to learn about new advances in programming and technology. It is a process that will never end.

Start by reading the GLOSSARY that follows in this manual. It defines many common terms not included in this basic certification course to help you in dealing with customers.

Working the Tutorial

Your next step must be to work the tutorial in Microsoft Windows 95. This strategic value-added product will give you the tools you need to close sales and understand the features and capabilities of these amazing machines called Personal Computers.

THE CERTIFICATION TEST FOR THIS BASIC COMPUTER CERTIFICATION COURSE WILL INCLUDE QUESTIONS BASED ON THE TUTORIAL FOR MICROSOFT WINDOWS 95.

You are encouraged to work the tutorials on other software available in your store to expand your knowledge. This pays large dividends in selling more systems, since the customer buys a computer to fill a need -they don't simply buy the machine. The computer gives the user the capability. The software adds the ability to meet the need.

Chapter 19

Computer Selling Aids

RadioShack invests millions of dollars each year to provide you with high quality, informative selling aids. Acquaint yourself with the following aids and publications as sources of information:

The RadioShack Catalog and Flyers

Once a year, a new edition of the RadioShack catalog is distributed to the store. This catalog details the specifications on equipment, software and accessories in a convenient format for you and your customers. Be familiar with its layout and know how to find the item your customer needs quickly. Our direct flyer mailing program also lists product features for the customer. Be familiar with the models featured in each issue and be prepared to answer customer questions.

Product Information Sheets

Product information sheets are produced on most models of computers. These single-sheets handouts are designed to give detailed information on the product. They are a practical way for you to update information about new models

Merchandising Newsletter

This is a monthly publication that gives details on new products released and offers helpful advice on selling and supporting computer sales.

The Merchandising Newsletter will also act as a guide to solving common customer problems. As calls arrive at our Customer Service Department, they are checked to see if a problem seems to occur more frequently than it should. When a "fix" or procedure is developed, the solution will appear in the Merchandising Newsletter. This publication is indexed once a year to make the search for information easy. Back issues of the Merchandising Newsletter should be kept in a binder in your store. Ask your store manager for its location and know how to use it to your advantage.

The C-Notes

Issued by RadioShack Computer Merchandising, the C-Notes give up-to-the-minute details on current promotional pricing and system packages. It should be readily accessible by all store employees, since it will detail any current marketing programs in effect for computers. Know where it is kept in your store to find what you need to close the sale.

The Bottom Line

Computer sales are vital to your success as a RadioShack associate. In addition to the financial rewards available from selling these high-ticket items, computer sales are tracked in company reports as a separate sales category.

Promotions to larger store operations often hinge on the ability of the associate to sell and service computer customers. Knowledge of computer systems can help you on the road to higher earnings and advancement. Start down that road today!

GLOSSARY

Adapter — A term sometimes used to refer to a printed-circuit card that plugs into a computer's motherboard, and that controls a device, such as a display monitor or a printer.

Address — An *address* in memory is a location to which an application or a piece of hardware refers. For example, a word processor will store your document in a particular memory *address* while you have it open. Problems occur when two things (hardware or software) try to use the same *address.*

Alt — A key on the keyboard (short for alternate). Typically used in conjunction with other keys, such as the shift key.

Application — Any program on your hard disk - *application* usually has it's own Directory and can be started by clicking on its icon in the Start Menu. Most *applications* have their own Window.

ASCII — (AS-Key) Acronym for "American Standard Code for Information Interchange," a standardized code. When you save your work to an ASCII file, it is translated into a form that can be read or received by almost any other computer.

AT — A computer featuring a 16-bit system bus. Most of the 80286, 80386 and 80486-class machines are 16 bit.

Backup — 1. (noun) A second copy of data which is stored in case you accidentally lose what you're working on. 2. (verb) The process of making a back-up ("Did you back-up that file?!). 3. An MS-DOS command (Opposite command of BACKUP is RESTORE.)

BASIC — Acronym for "Beginners All-purpose Symbolic Instruction Code." One of the simplest computer languages; used for writing many different programs.

Baud — A unit of measurement of signal modulation speed. The term refers to the rate at which an RS-232 interface can oscillate between the binary on and off signals to transfer data.

BIOS — Short for Basic *Input-Output System:* this is a chip (or set of chips) in your computer that controls how your computer communicates with some of the basic hardware components in your system, such as the keyboard, floppy drive, and hard disk. In newer computers, the *BIOS* is also what supports *Plug-&-Play.* A buggy or incompatible *BIOS* is a common cause of problems in Windows 95.

Boot (verb) The process by which you load the first basic instructions into your computer. These instructions then load the rest of the operating system. Example: when you turn on your computer, locates the DOS files (in either drive A or on drive C, if it has a hard drive). You have then "booted-up" DOS. (Derived from "pull yourself up by your own bootstraps.)

BPS Acronym for "Bits Per Second." A unit of measurement of data transfer speed. Typical rates are 300, 1200, 2400, 4800 and 9600 bps. This is the common speed measurement in modem operations.

Browser A winsock client (software) used to navigate the World Wide Web. Netscape, Mosaic, and Internet Explorer are examples of *browsers.*

Buffer The use of part of your computers memory to relieve the burden on a specific component, such as your keyboard or printer. For example, if you press all of the keys on your keyboard at once (on a slow computer), the letters would appear on the screen slower than you've type them. Since the computer isn't able to process keys that quickly, the keys you've pressed are stored in a *buffer* and fed to the computer at a slower rate it can handle - this way, your keystrokes aren't lost. Note that your computer will beep if the buffer is full, telling you keys pressed thereafter will be forgotten. Similar to Cache.

Bug A small inimical enemy to a computer program. A selection of routines, keystrokes, or commands that cause a computer program to operate improperly ("hang up"). To remove the bugs you ran a "de-bugger" or a problem hunter that looks for errors in the lines of code of an application.

Button A 3-D control on the screen that looks like it's pushed in when you click on it. This is different from an icon, although *buttons* can contain icons. *Buttons* usually get a single left-click, while icons get a double-click.

Bus A channel or path for transferring data and electrical signals. It is referred to by the number of bits that it can accommodate simultaneously, i.e. 8-bit bus, 16-bit bus, 32-bit bus, 64 bit bus.

Byte An element of data, composed of eight bits. To your computer, this group of eight digits, or "bits" represents one character. The amount of space on a disk is measured in bytes.

Cache The use of part of your computer's memory to improve the performance of a specific component's such as your hard disk, CD-ROM drive, or even your processor. By storing recently accessed information in a *disc cache*, for example, your computer can respond faster because it is accessing memory, instead of the slower hard disk. (pronounced "cash") Similar to Buffer.

CGA Monitor — Color Graphic Adapter digital monitor; has multiple modes, 320 X 200 lines with four colors, and 640 X 200 with two colors.

Character — Any single letter of the alphabet, punctuation mark, numeral or other symbol that a computer can read. Usually entered through the keyboard.

Clone — A computer that is built to be compatible with another make and model of personal computer. A clone is usually a less expensive version of a popular industry-leader. Other industries call it "a knock-off."

CMOS — A small bit of memory used by your computer used to store certain settings while it's turned off, such as the type of hard disk installed. You can typically change the *CMOS* settings by pressing a certain keystroke (such as **Del** or **ESC**) during the system boot.

Context Menu — The menu that appears when you right-click on an object, such as a folder or a file. It's called a *context menu* because the items in the menu depend on what's being clicked - the menu is appropriate to the *context*.

Color monitor — A TV set-like device that enables you to see characters and graphics in full color.

Command — (noun) Any kind of instruction to your computer.

Configuration — An assembly of machines, devices or systems that are hooked-up to work together.

Control key — The key labeled Ctrl; used like the shift or Alt key by holding it down while pressing another key. It usually causes something to happen rather than displaying a character on the screen. It looks like ^ when displayed.

Crash — Hopelessly messed up. ("My hard disk crashed while I was trying that new program.") Try to back up at least once a day before a crash happens.

CPU — Acronym for "Central Processing Unit," the part of the computer whose circuits control the interpretation and execution of instructions. The main "box part of the computer system.

Current directory — The directory in which DOS looks for files unless otherwise instructed.

Current drive — The drive containing the disk on which DOS looks for a directory or file unless otherwise instructed.

Cursor — The moving or blinking dash or rectangle symbol on your monitor which indicates where the next character will appear.

Daisy wheel printer — A type of printer which uses a "daisy wheel" of fonts; a small wheel which contains imprints of all the characters; struck against the printer ribbon to transfer an impression to the page. Good quality. You've seen them on typewriters. Referred to as LQ or letter-quality printers.

Data — A general term referring to all the basic information elements that can be produced or processed by a computer.

Data file — A collection of related data records organized in a specific manner. The records in a data file contain information, not computer programs or instructions. ("This data file called "ARGSOX" is an inventory of every pair of argyle socks I own. Thank goodness for computers.")

Database — A collection of related data grouped together and stored in your computer. It can refer to data files filled with information.

DDE — Short for *Dynamic Data Exchange*; the method by which different applications can communicate with each other. For example, installation programs use *DDE* to communicate with your Start Menu (or the *Program Manager* in Windows 3.x) to add new program icons See OLE.

Debug — The process of checking a computer program to isolate and remove any mistakes (or "bugs") from it.

Default — Certain actions, settings, etc., are so common and repetitive that the software makers provide you with the "default settings." These are the settings which appear on screen automatically. If you want a different setting, you can change the default.

Defragment — Using the *Disk Defragmenter* application, you can fix all the files on your hard disk that have become fragmented. When many files become fragmented, your hard disk performance is slower, and the danger of file corruption is greater, so it is a good idea to *defragment* often. This is also known as *Optimizing* your hard disk.

Desktop — The blank area on your screen behind all the windows. The *desktop* in Windows 95 can hold icons, because it is really a directory on the hard disk. Right-click on the *desktop* to change its many properties.

Desktop Computer — A computer that sits on top of your desk, as opposed to one which fills three rooms at the Pentagon.

Desktop Publishing — Using a personal computer system to create graphics, arrange it all on the page and print it out.

Device — Any piece of equipment connected to your computer system.

Directory — A table or listing that gives the name, location, size and other information for each file on your storage disk.

Display — The screen on which the computer shows what you type at the keyboard.

Disk — A storage device used to hold files and directories. There are hard disks and floppy disks

Diskette — Another name for floppy disk.

Document — This is the file you create in an application - an example is a letter that you've written in a Word Processor. Every document has its own icon.

DOS — Acronym for "Disk Operating System", a collection of procedures to relate our computer to itself, a group of cryptic commands for better program arrangements and storage organization.

Dot matrix printer — A type of printer which uses a font composed of a number of small "pins" which strike the printer ribbon in various combinations and arrangements to produce a character on your paper.

Double-density — A type of diskette that has twice the storage capacity of early, single density diskettes. (Contrast with "Single Density" and "High Density").

Double-sided — A diskette that can store information on both of its surfaces.

Download — To capture and store information sent to your computer by another computer, rather than just letting it scroll off the screen into oblivion. To capture any relevant data and store it.

Driver — A piece of software that assists your computer in using a specific device, such as a printer or scanner. Buggy. drivers cause the majority of problems with a computer. (more information)

Drive letter — The letter that identifies a disk drive. The first disk drive is usually called the "A" drive, and the first hard drive is usually called the "C" drive.

EGA Monitor — Enhanced Graphics Adapter digital monitor; provides 640 X 350 pixel display with 16 colors.

Email — A method of sending and receiving personal messages over a - networks, such as the Internet. Windows 95 comes with Exchange, an example of Internet *email* client software.

Enter Key

The key you press to tell DOS that you have finished typing a line. Often used by programs as an acceptance key to a command or menu choice.

Electronic mail

Term used to describe the exchange of files from one computer to another, via phone lines and a modem. Also called "E Mail" by the truly hip.

Erase

To remove or replace magnetized data on a storage medium, such as a floppy disk. When you tell your computer to "erase" a file, make sure you really mean it.

Error message

That sharp beep and/or on-screen message that informs you of a hardware or software malfunction or of a mistake in your command or data entry.

Escape key

The key labeled ESC: in DOS it cancels a line you have typed by have not entered by pressing the Enter key. Often the "cancel" or "escape out of" key is used by various software.

Execute

To carry out an instruction or perform a command. When the computer can do this, it is said to be "executable." When it cannot, the instructions are "non-executable."

Extension

When you name a data file, the name can be followed by an "extension" from one to three characters. The extension is separated from the name by a period or dot, and it helps clarify the contents of the file. Example: when you see the filename "PYTHON.DOC", you know that file contains the DOCument you wrote to the vet about your pet PYTHON.

Field

An area of a record that is set aside for a specific category of data. Example: In your "Baseball Card Collection" database, there is a record for each card. "Player's Name" is one field in the record.

File

A name collection of information stored on a disk; usually contains either data or a program.

Filename

The unique name you give to a particular data file, so you can tell what it is when you see it on the directory. DOS limits file names to 8 characters, Windows 95 allows 256 characters.

5-1/4

The diameter, in inches, of a certain type of floppy disk. These disks are protected only by a soft plastic envelope and a paper cover, and are very floppy indeed (also easily destroyed!).

Floppy

Abbreviation of "floppy disk," the term used for soft or removable storage disks. (They don't always flop.)

Folder — Interchangeable with Directory, although *folder* is a newer form.

Fragmented — When a file has become *fragmented*, it means that it is broken up into pieces on your hard disk. Imagine if you saved a file to your hard disk, and then saved another right after it. When you go to add more to the first file and then save it again, it no longer can fit in the space allotted, and must be split apart. When many files become fragmented, your hard disk performance is slower, and the danger of file corruption is greater. To fix fragmented files, you must defragment your hard disk.

Format — An arrangement of data in a particular structure. You usually format a disk (unless it comes pre-formatted) to operate in your Disk Operating System environment.

Function keys — The keys labeled "F1" through "F12" on your keyboard. They are just another way of giving commands to your computer, and their meanings change depending on your software. They purpose can be altered when used with the Shift, Control or ALT keys. (But so can every other key on the board).

GB — An abbreviation for Gigabyte.

Gigabyte — One billion bytes, or more precisely, 1,000 megabytes (totalling 1,073,741,824 bytes). Different definitions of this term cause discrepancies between different manufacturers and applications.

GIGO — Acronym for "Garbage In - Garbage Out." Means that if your input is bad, your output data will be bad, too. (Get it right before you go on!)

Graphics — Computer output in the form of displays, drawings, and charts.

GUI — Short for *Graphical User Interface;* a type of user interface that uses graphics (such as icons and windows) to control the computer. Windows 95 uses a GUI.

Hacker — Slang term for someone who is "really into computers!"

Hard copy — A printed copy of computer output; a report, graph, etc.

Hard disk — A storage device consisting of one or more rigid disks coated with magnetic material, sealed inside a special casing. The hard disk can store a much greater amount of data, and access it faster, than a floppy diskette. A hard disk requires special controller circuitry to be installed.

Hardware — Any piece of equipment that comprises a computer system.

High density — The current 1.2 megabyte 5-1/4 floppy or 1.44 megabytes 3-1/2 floppy diskette.

I/O — Acronym for "Input/Output" (See below)

Icon — The little pictures that you see on the screen, usually representing folders and files - *icons* can be dragged onto other *icons* onto applications, and into folders *Icons* usually get a double-click, while buttons get a single left-click.

Ink Jet Printer — A printer which uses heated liquid ink sprayed through nozzles to form patterns on single sheets of paper. Affordable color technology for family use.

Input — 1. (v) To enter data into a computer. 2.(n) The data you enter into a computer.

Input/Output — General term for devices that communicate with a computer.

Integrated circuit — A complete electronic circuit contained in a small semiconductor. This makes it possible to build a computer that is smaller than a bus.

Interface — An information interchange path between two pieces of hardware or two computer systems. ("These things wouldn't work together until I bought an interface.")

Internet — A term used incorrectly to describe the World Wide Web - the *Internet* is a WAN, and a superset of the World Wide Web. Originally connecting a few universities and the United States government, it was designed to provide a network that could withstand a war, because of its decentralized structure. See email, telnet, and ftp

Interrupt — A method by which a piece of hardware communicates with the processor. It's called *Interrupt*, because the device (such as a sound card) *interrupts* the computer to carry out a function (such as playing a sound). See IRQ. (More information)

IRQ — Short for *Interrupt Request Line;* A number used to describe an interrupt. An *IRQ* can be any number from 0 to 15, inclusive. *IRQ* problems occur because two pieces of *hardware*

K — Abbreviation of "Kilo" or "Kilobytes," a measure of storage capacity. On kilobyte is equal to 1,024 bytes, or characters.

Keyboard — The device that consists of a collection of labeled keys and is used to give instructions and data to a computer.

LAN — An acronym for Local Area Network. (See definition of Local Area Network.).

Language — 1. The coded symbols that convert or compile into what a computer can understand. 2. A set of rules, conventions and representations used to convey information. Communicating with a computer requires the use of a language the computer can understand, such as BASIC, FORTRAN, "C," PASCAL, FORTH, or COBOL.

Laptop — A small, portable computer that behaves like a Desktop. So called because it can sit on your lap on long cross county flights.

Laser printer — A printer which uses laser technology to transfer data to paper. Kind of like a photo copy machine hooked up to your computer. Currently, the state-of-the-art in top quality printing.

Letter Quality — (LQ) A term used to describe the overall clarity and legibility of a printer's output. Comparable to a typewriter.

Local Area Network — An arrangement of computers on a physically connected arrangement of cables and adapters allowing them to share the resources according to the instructions programmed by the system administrator. Frequently referred to as a **LAN**.

MB — Abbreviation of "Megabyte", a measure of storage capacity. One megabyte is equal to 1,000,000 bytes, or characters, of storage space.

Main Frame — Before PCs, computer were quite large and were often put into a metal frame. The "Mainframe" held the CPU. The term persists as the generic name of large capacity business computers requiring special environments and constant technical support.

Media — The physical material on which data is recorded and stored. Magnetic tape, optical disks, magnetic diskettes, hard disks, and punch cards are all "storage media."

Memory — The high-speed work area inside your computer where data can be held, copied and retrieved. Generally, the more memory you have, the faster and more versatile your computer will be. There are two types of memory, RAM and ROM.

Menu — A list of tasks, commands or operations called on by the computer operator.

Microcomputer — A small, low cost computer, sometimes called a PC.

Modem — Acronym for "MOdulator/DEModulator", a device that enables a computer to connect to another computer and exchange information via telephone lines.

Monochrome monitor — (Note: See color monitor) A TV set-like device that enables you to see what you are working on in back and green (or orange, or sepia-tone).

Motherboard	The main interconnecting assembly which houses the main parts of the central processing unit (CPU); printed circuits, memory and other boards or modules can also be plugged into this main board ("If you want to be a hacker, you'll attach add-in cards to your motherboard and upgrade your system!")
Mouse	A hand-slide device that enables you to move the cursor all around the screen and give commands to your computer without having to go through the keyboard. Especially handy for creating graphics, it is essential for Microsoft Windows users. Called a mouse because it looks like a mouse with a very long tail.
MS-DOS	(MicroSoft Disk Operating System) The Disk Operating System is a collection of programs which is responsible for storing and retrieving information stored on floppy or hard disks. It also manages system resources such as printers, peripherals devices, and allows you to execute other programs.
Network	The interconnection of a number of computers, via cables, modems or other means that share resources, like drives or printers.
Operating system	A program that coordinates the operations of all parts of a computer system.
Output	The result of a program's processing its input data.
Operating system	A program that coordinates the operations of all parts of a computer system.
Output	The result of a program's processing its input data.
Parallel	A communication technique that uses multiple interconnecting wires to send all eight bits of a byte at once.
Path	1. The list of directory names that defines the locations of a directory. 2. The "path" that the computer follows to find the location of a file.
Peripheral	An external device that you use with your computer. (An extra disk drive, modem, etc.)
Pixel	Sort of an acronym for "Picture Element." A pixel is a single dot on your monitor. Put together, all these dots make a picture or character. The more pixels, the clearer the image.
Port	Connecting plugs for various peripheral devices, such as a printer.
Printed-circuit Card	A thin, rectangular card or board, usually made of fiberglass or epoxy and coated with copper. A circuit is etched into the surface, and the electronic devices, like integrates circuits, are soldered to the circuit. Computer systems are actually made up of a number of these cards.

Printer — A device that generates paper copies of data from the computer.

Processor — This is the chip in your computer that does all the calculations - for Windows 95 users, it's based upon Intel's x86 architecture, which includes the 386, 486, and Pentium series. This is also referred to as the CPU.

Program — A series of instructions written in a form that your computer can understand. Computer systems are actually made up of a number of these cards.

Prompt — A character or series of characters that appear on screen, "prompting" you to enter information. Example: when you see "A>" on your screen, you are at the "A" prompt.

RAM — Acronym for "Random Access Memory," your computer's high-speed work area that holds data files and programs while you are working on them. The RAM allows you quick access to everything stored in it, and the more RAM you have, the faster and more versatile your computer will be. Warning: RAM is erased when power is shut off. That's why you have to save your work to disk or diskette before you knock off for the night.

Reboot — The process of re-starting your computer. If you turn it off and then on again, or use the reset button on the front of your computer, it's called a *cold boot.* If you hold **Ctrl** and **Alt** while pressing **DEL**, it's called a *warm-boot.* See Boot

Registry — A complicated database of settings for use in Windows 95. You can edit these settings with the Registry Editor, REGEDIT.EXE. The *registry* is stored in two files in your Windows 95 directory, USER.DAT and SYSTEM.DAT.

RGB Monitor — RGB stands for Red, Green, Blue. RGB monitors use separate signals for each of these primary colors to produce a color image.

ROM — Acronym for "Read Only Memory," a type of memory that contains permanent data or instructions for your computer. The computer can read from ROM, but it cannot write to it. It is not lost when the computer is turned off.

Root Directory — The main directory that DOS creates on each disk; the top directory in the file-tree system.

SVGA — (see Super Video Graphics Array)

Scroll — (v) Term used to describe the movement of data on your monitor screen. Information normally appears at the bottom of the screen and scrolls up.

Server

A computer on a network that handles a specific function for the rest of the network. For example, a print *server* can allow all the computers on a LAN to use a printer. A World Wide Web *server* contains pages (like what you're viewing) that are sent to other computers on the Internet for viewing.

SIMM

Short for *Single Inline Memory Module*; a *SIMM* is a small circuit board that holds memory chips. Rather than installing individual chips to increase your system's memory, you install *SIMMs*, which are much easier to install and remove. Nearly all newer computers (those capable of running Windows 95) use *SIMMs*.

Single density

The standard recording density of a diskette. (Contrast with "double-" or "high-density.")

Single-sided

A diskette that contains data on one side only.

Slot

A place on your motherboard where you can plug in cards and expand your computer's capabilities.

Software

A set of instructions that, when executed, tell the computer to perform certain tasks. Other terms that are used interchangeably are "application" and "program".

Spreadsheet

A display of data and numeric information that uses columns and rows arranged across the page. Spreadsheets are great for seeing information at a glance, changing what you see, and seeing instant results of your changes; and computers are superb at creating spreadsheets.

Start Menu

The menu that appears when you click the button labelled **Start** at the bottom of your screen, on the Taskbar.

String

A word, phrase or other group of bits or characters. With many software programs, you can locate a certain data file by searching for a string of characters that you know is in the file.

Swap File

A file on your hard disk called WIN386.SWP that Windows 95 uses to store information when you run out of memory. Since a hard disk is slower than memory, a system without a lot of RAM will run out of memory sooner, requiring heavier use of the *swapfile*, thereby resulting in slower performance. Note that if you've upgraded from Windows 3.x, the old filename for the *swap file* (386SPART.PAR) is preserved. (More information)

Sub-directory

(Note: See Directory) A grouping or a branch within a directory that holds files under the same directory. Example: You may have a Directory called "Winword," containing all the files that relate to the Word for Windows software program. To organize your files, you can create a Subdirectory called "Text" inside the first directory, to hold word processing documents only.

Super Video Graphics — A high resolution display capable of producing up to 256 colors on the screen simultaneously from a pallet of 256,000 colors. Resolutions can range up to 1024x768.

System — An organized grouping of hardware and software, hooked together as a unit.

Sanwa Leasing Company — The business financing plan for RadioShack's computer products. (See the SLC guide in your store.

Task — Any program that is currently running on your computer. You can switch between *tasks* with the Taskbar or by pressing **Alt-Tab** on the keyboard.

Taskbar — The bar along the bottom of your screen, containing the Start Menu and a button for each running Task.

Text — Ordinary, readable characters, including the letters of the alphabet, the numerals 0-9, and punctuation marks.

3-1/2 — The diameter, in inches, of a certain type of floppy disk. These disks are encased in a hard plastic shell, which better protects them from bending than the flexible-jacket version.

32-Bit — In reference to Windows applications, a method by which an application uses your computer's memory and communicates with other applications. 32-bit applications typically embody several features not found in their 16-bit counterparts, such as long filenames, preemptive multitasking, and multithreading.

Titlebar — The stripe across the top of a window containing the title of the application in the window. You can move a window by dragging its titlebar.

Tree — A graphical diagram used to display the hierarchical structure of the directories on a disk. The Windows 95 Explorer allows the disk to be viewed in this fashion.

Update — To change a file, creating new (or updated) versions.

Upgrade — To expand your system by installing hardware options or add-ins, or by using the latest revised software.

VGA — (See Video Graphics Array)

VLMF — (See Very Low Magnetic Frequency)

Very Low Magnetic Frequency — A rigid standard of reduced emissions for video displays.

Video Graphics Array

Video Graphics Array analog monitor; provides 17 operational modes. Maximum text resolution is 720 x 400 with 64 colors or shades of gray. Provides a palette of 265,000 colors in 320 X 200 mode, only 16 active at one time.

Window

A display of instructions, menus, etc., on the screen inside a box. you "open the window" when you call it up, and "close the window" when you remove it from the screen.

Word processing

The use of a software program to create letters, manuscripts, memos and other non-numerical documents. Rule of thumb: Jobs that used to be done on typewriters are now word processing jobs.

Write protect

To protect a diskette from changes. To stick a very small sticky tab across a tiny opening on a 5.25" floppy disk that prevents anything from being written (copied) to the disk. Changing the the position of a plastic tab on the edge of a 3.5" disk does the same thing.

Workstation

1. The place where you pile-up, connect, and use your PC. ("My workstation is in the den, under the moose head"). 2. A terminal connected to a LAN or Multi-User system.

World Wide Web

The portion of the Internet you used to access this page. WWW for short, it is a subset of the Internet. Netscape, Mosaic, and Internet Explorer are examples of browsers used to navigate the World Wide Web.

XT

1. A computer featuring an 8-bit system bus. 2. The first "hard disk" machines introduced after IBM's original 8088 dual floppy "Personal Computer." (An abbreviation for "extra.")

Answer Key for Review Questions

Quiz 1

1. 1-800-2TANDY4
2. hardware and software
3. MMX Processor
4. Random Access Memory
5. Read Only Memory

Quiz 2

1. Daisy wheel, Dot matrix, Ink jet, Laser
2. DVD
3. 5-1/4 and 3-1/2
4. Video Graphics Array

Quiz 3

1. Microsoft Dick Operating System
2. Graphical User Interface
3. True
4. False
5. Programs Submenu
6. Recycle Bin

Quiz 4

1. Follow-Up
2. Five
3. Curiosity, Vocational Use, Personal Use, Personal Improvement
4. Individual and Organizational

INDEX

3-1/2, 16, 17, 18, 19, 70
5-1/4, 16, 63

adapter, 58
Alt, 11, 58
application, 30, 31, 32, 33, 36 38, 48, 58
ASCII, 8, 21, 58
AT, 9, 58

back lit, 15
back up, 30, 32, 38 58
BASIC, 58
baud, 21, 58
bit, 8, 20
boot, 59
BPS, 21
bug, 59
bus, 59
byte, 8, 35, 59

CD-ROM, 19, 20, 33, 35, 55, 56
central processing unit (CPU), 8, 60
CGA, 14, 60
character, 8, 22, 24, 60
clone, 60
color monitor, 13, 60
color printer, 25
color printing, 25
command, 26, 60
commercial charge accounts, 53
computer selling aids, 56
configuration, 21, 60
control key (Ctrl), 12, 60
CPU, 8, 9, 18, 60
crash, 32, 60
current directory, 60
current drive, 60
cursor, 12, 60
customer service line, 54

daisy-wheel printer, 23, 24, 61
data, 17, 32, 61
data file, 61
database, 61
debug, 61
default, 34, 61
desktop, 29, 31, 61
desktop publishing, 61
device, 21, 61
directory, 30, 61
diskette, 16, 17, 49, 62
document, 33
dot matrix printer, 23, 24, 62
double-density, 17, 62
double-sided, 17, 62
download, 27, 62
drive letter, 62
DVD, 19

EGA Monitor, 62
electronic mail, 63
enter key, 63
erase, 63
error message, 63
escape key, 63
execute, 63
extension, 63

faxback, 55
field, 63
file, 30, 63
filename, 30, 63
floppy disk, 16, 18
floppy disk capacity, 16, 17
floppy disk drive, 15, 16
format, 64
function key, 11, 64

gigabyte (GB), 18, 64
GIGO, 64
graphical user interface, 27, 30, 64
graphics, 64

hacker, 64
hard copy, 64
hard disk, 18, 28, 64
hard disk drive, 27
hardware, 8, 22, 64

high density, 17, 28

I/O, 65
icons, 28, 34, 65
ink jet printer,, 23, 24, 65
input, 65
input/output, 65
integrated circuit, 65
interface, 27, 65

keyboard, 8, 11, 47, 65
kilobyte (K), 8, 17, 65

LAN, 36, 65
language, 66
laptop, 11,14, 66
laser printer, 23, 24, 66
LCD, 15
letter quality, 66
local area network (LAN), 36, 66

mainframe, 21, 66
media, 35
megabyte (Mb), 8, 17, 19, 35, 66
Menu Boxes, 30
modem, 21, 22, 48, 66
monitor, 8, 13, 14, 37
monochrome monitor, 66
motherboard, 67
mouse, 12, 28, 30, 31, 65
multimedia, 9, 19, 35, 36
multi-tasking, 26, 32
multi-user, 32

network, 36, 67

Operating system, 26, 27, 67

path, 67
pentium, 9, 10, 28
peripherals, 8, 22, 34, 36, 67
port, 22, 67
printer, 23, 24, 34, 37, 49, 56, 68
processor, 9, 28, 68
program, 7, 30, 35, 68
prompt, 68

RAM, 10, 38, 68
random access memory, 10
read only memory, 11, 12
Repair Services, 51, 54
resolution, 13
RGB, 13, 68
ROM, 11, 12, 68
root directory, 68
RSVP (Radio Shack Value Plus), 40, 45, 49, 53

single density, 16
SIMM, 10, 69
slot, 69
spreadsheet, 33, 69
storage device, 15, 16
string, 69
super video graphics array, 14, 70
support services, 6, 53, 54
SVGA, 14, 68

Tandy Service Plans, 42, 55
Title Bar, 29
TSP, 412 55

update, 25, 70
upgrade, 70

very low magnetic frequency, 14, 70
VGA, 14, 70
video graphics array (VGA), 14, 28,71
VLMF, 14, 70

window, 27, 28, 29, 30, 31, 71
Windows tutorial, 28, 35, 56
word processing, 33, 71
write protect, 71

XT, 71

COMPUTER CERTIFICATION EXAMINATION

Directions: This examination is based on information from the Computer Sales Training Manual and the tutorial found in Microsoft Windows 95. To complete this examination you must have a Computer Certification Scantron Form and a **Number Two Pencil.** Obtain these from your store manager. Complete the header information. Please **PRINT** all information on this form. Select the best answer by filling in the correct answer choice. If you need to change an answer, complete erase your incorrect answer and fill in the correct answer. Maker sure that there are no unnecessary marks on this form. There are 100 questions on this Computer Certification Examination. Each question is worth 1 point. A perfect score is 100 and passing is 90 or better.

1. What is the most basic unit of computer information?

   a. Character
   b. Byte
   c. Bit
   d. Word

2. The main "box" containing the processor, memory chips and system bus is referred to as a(n)...

   a. System Unit.
   b. Floppy Disk Drive.
   c. Cache Memory.
   e. Keyboard.

3. Customers buy computers to...

   a. Educate.
   b. Play games.
   c. Increase Personal Job Marketability.
   d. All of the Above.

4. The microchip which acts as the "brain" for the computer system is known as the...

   a. Power supply.
   b. Microprocessor.
   c. Floppy Drive.
   d. Hard Drive.

5. SIMM chips are another form of...

   a. Super Intel Memory Manager.
   b. Processor.
   c. RAM.
   d. Simple Processors.

6. When a computer is referred to as *multi-user,...*

   a. It can support many users at the same time.
   b. It can be set up to use MultiPlan Spreadsheets
   c. It has been previously owned.
   d. It can use both 5-1/4" and 3-1/2" diskettes.

7. The customer support provided by IBM to all of it's Aptiva customers.

   a. IBM PC Help Center
   b. Tandy Service Plan
   c. Sanwa Leasing Corporation
   d. IBM Aptiva Hotline

8. The MMX processor is separate from the computer's main microprocessor.

   a. True
   b. False

9. Which is rarely a reason people buy a personal computer.

   a. Curiosity
   b. Vocational use
   c. personal use
   d. impulse

10. Computers using different operating systems may still share information if it is presented in a standard code set. The most common code used for information sharing via modem is...

    a. Morse Code.
    b. American Semaphore.
    c. ASCII.
    d. Hexadecimal Hyper talk.

11. A device which a user rolls across a surface, such as a desktop, to effect a proportional movement of the pointer or cursor on the screen is called a...

    a. Mouse.
    b. Light Pen.
    c. Track Star.
    d. Keyboard.

12. Microsoft Windows uses pictures to represent program names and functions. These pictures are called...

    a. Menu Boxes.
    b. Illustrations.
    c. ICONS.
    d. Pointers.

13. In Microsoft Windows, reducing an application or program group to an ICON is called...

    a Maximizing.
    b. Shrinking.
    c. Minimizing.
    d. Sizing.

14. Microsoft Backup for Windows is an example of a(n)...

    a. Graphical User Interface.
    b. Windows Application.
    c. Operation System.
    d. Programming Language.

15. "Will you be using the computer, or will someone else?" This is an example of...

    a. A Warm Up.
    b. A Close.
    c. An Objection.
    d. A Qualifying Question.

16. The place to get computer hardware and accessories that are not stocked in your store would be...

    a. T.O. S.S. at RadioShack.
    b. RadioShack unlimited.
    c. Faxback.
    d. Sanwa.

17. If you want to backup only those files that have changed since the last full backup you should use...

    a. Full backup.
    b. Partial backup.
    c. Incremental backup.
    d. Differential backup.

18. Windows applications have the same look and feel. Most applications use "buttons" lined across the upper screen to accomplish common tasks. This line of buttons and option boxes is called...

    a. The Title Bar.
    b. The Control Box.
    c. The Minimize Arrow.
    d. The Tool Bar.

19. The True Type fonts in Microsoft Windows are scaleable and can be printed in a wide range of sizes on a laser printer ink jet without sacrificing print quality.

    a. True
    b. False

20. Copying or moving files in Windows is accomplished in...

a. Control Panel.
b. Windows Setup.
c. Explorer.
d. Print Manager.

21. MS-DOS and OS/2 are examples of...

a. Operating Systems.
b. Program Languages.
c. Disk Drives.
d. Hard Drives.

22. The Best computer financing alternative for small businesses is...

a. RSVP.
b. TSP.
c. SLC.
d. TOSS.

23. Faxback is...

a. A Paid Support Service.
b. Available Only to Store Personnel.
c. A toll Free Fax Retrieval Support Service.
d. A Place for Customers to Send Fax Inquiries.

24. What is the most common type of display in Laptop (potable) computers?

a. Liquid Crystal Display (LCD)
b. Cathode Ray Tube (CRT)
c. Plasma
d. RGB

25. Windows uses a print manger to control printer functions. Where is the printer setup located?

a. In Desktop
b. In Explorer
c. In the Control Box
d. In Control Panel

26. The type of storage device featuring rigid disks covered with magnetically sensitive material are called...

a. 1/2 Floppy disks.
b. Hard Drive.
c. Compact Disks.
d. Floppy Drives.

27, The images on a computer display are made up of an arrangement of dot positions called...

a. ICONS.
b. Resolution Points.
c. Quarks.
d. Pixels.

28. PCs equipped with _____ micro processors, can easily access Extended Memory.

a. 808sx, and the Z-80
b. 80486, and Pentium
c. 80286, 80640, and Octium
d. Intel zip SIMM chips

29. The mechanical components which make up a computer system such as the CPU, Keyboard and Mouse are called...

a. Software.
b. Hardware.
c. Processor.
d. Data.

30. Windows can display more than one window on the screen at a time. The window with a highlighted title bar is called...

a. The Major Window.
b. The Current Directory.
c. The Primary Window.
d. The Active Window.

31. Permanent, unalterable memory that is stored on a chip is an example of...

a. RAM.
b. Graphics.
c. VGA.
d. ROM.

32. RAM is termed "volatile memory" because...

a. Unless it is stored prior to system shutdown it is lost.
b. It can damage the system.
c. It is unreliable.
d. It is permanent.

33. If a system is *multi-tasking,*

a. It can support many users at the same time.
b. It can use both 5-1/4" and 3-1/2" diskettes.
c. It has been previously owned.
d. It can be set up to use several programs simultaneously.

34. Which type of printer is suited only to text but not graphics?

a. Daisy Wheel
b. Dot Matrix
c. Ink Jet
d. Laser

35. Very Low Magnetic Frequency (VLFM), VESA, and MPRII are ratings of safety for...

a. Computers rated for use on a novel network.
b. Computer Monitors.
c. Computer Magnetic Media.
d. Computer Keyboards.

36. Computer memory that is built-in, is permanent, and can only be executed but not modified is called ROM.

a. True
b. False

37. What is a typical buying signal the computer prospect might give you to cause you to stop and close?

a. My brother has a computer.
b. How big are these windows I keep hearing about?
c. Do you have these in stock or would I have to wait to take it home?
d. None of the above.

38 Dots Per Inch (DPI), and Pages Per Minute (PPM) are expressions to rate:

a Ink Jet and Laser Printers.
b. Daisy Wheel Printers.
c. Windows Program Manager.
d. SVGA monitors and Pages displayed on screen.

39. The analog monitor system capable of producing resolution of up to 1024x728 in 256 simultaneous colors is...

a. VLMF.
b. CART.
d. SVGA.
d. RGB.

40. To install a printer driver in Windows you must access the control panel.

a. True
b. False

41. 3-1/2" diskettes, with their plastic covering are referred to as...

a. Hard Disks.
b. Fixed Disks.
c. Low Density.
d. Floppy Diskettes.

Matching: Choose the best Answer.

43. Service Plans
44. Product Support Library
45. Financing

a. Faxback
b. TSP
c. RSVP

Matching: Choose the answer to "Why RadioShack?"

46. First company to mass-market PCs.
47. In electronics business over 70 years.
48. 6800 service drop-off points.

a. Proven Leadership
b. Prompt Service
c. Electronics Specialization

Choose the best answer:

49. The Windows function that allows you to enlarge a program group to fill the screen is called...

    a. Minimizing.
    b. Maximizing.
    c. Sizing.
    d. Restoring.

50. If your customer has a "Memory Allocation Error" they should...

    a. Alter their CONFIG. SYS file.
    b. Exit Windows.
    c. Turn on their printer.
    d. Close one or more applications.

51. Windows allows more than one application to be displayed on the screen. To change from one window to another,

    a. Press <Alt> + F1.
    b. Choose *Change Window* from the Edit.
    c. Click anywhere on the window you wish to become active.
    d. Press <Ctrl> + <Tab>.

52. Windows allows the user to automatically execute an application when starting Windows by...

    a. Copying the ICON to the *Startup Folder.*
    b. Flagging the application in *Explorer.*
    c. Entering the application name under *Windows Setup.*
    d. Placing a box around the application ICON in the *Accessories Group.*

53. In Windows you have opened a second application and the new application fills the screen, hiding the first application. Which option below will allow you to view the original application?

    a. From the *Insert Menu,* click the *New Window* option.
    b. Click the minimize button.
    c. From the *View Menu,* select the *Tile* option.
    d. You may only view the original application after closing the active application.

54. To open a Menu Box in Windows...

a. Hold <Ctrl> while pressing the letter underlined in the Menu Bar.
b. Click the control box to pull down the menu list.
c. Click on the desired Menu Bar item.
d. Double click the *Menu ICON.*

55. To close an application in Windows...

a. Double-click the *Control Menu* for the application's window.
b. Click the minimize button.
c. From the *Window* menu, select close.
d. Click the down arrow on the right scroll bar.

56. To move a window from one area of the screen to another without changing its size...

a. Move to the border of the window and drag in the desired direction.
b. Hold <Ctrl> while pressing the arrow key(s) for the desired movement.
c. Use the *Move* command under the *View Menu.*
d. Drag the Title bar to the desired location.

57. All of the following are motivators for the business computer buyer except...

a. Productivity.
b. Economy.
c. Entertainment.
d. Reliability

58. Shortcuts put icons from your most used programs are on the start menu.

a. True
b. False

59. To rescue your Taskbar when it disappears, you should:

a. Press CTRL+ALT+DEL.
b. Hold down the CTRL key and press ESC.
c. Double-click on the Explorer title bar.
d. Drop the ransom money and slowly back away.

60. RadioShack has many great selling aids like...

a. PCM magazine.
b. 1-800-2TANDY4.
c. POS system.
d. Merchandising Newsletter.

61. Lost your window? You should look for it in the...

a. Control Panel.
b. Taskbar.
c. Terminal.
d. Object Packager.

62. TSR stands for...

a. Training and Sales Reports.
b. Transfer and Save Revision.
c. Total System Recovery.
d. Terminate and Stay Resident.

63. The technology that compresses and decompresses video for playback and computer is...

a. MPEG.
b. Mwave.
c. SLC.
d Intel.

64. The possible motivation for a retired person to purchase a personal computer is:

a. Education/success of child.
b. Career advancement, status.
c. Free time, second career.
d. Both a and c.

65. Microsoft Windows 95 incorporates a memory manager allowing computers with more than 640K of RAM to use the additional memory to work with programs.

a. True
b. False

66. Only programs designed as Windows applications can be executed from Windows.

a. True
b. False

67. Windows automatically selects the appropriate printer driver for the customers printer when it is installed.

a. True
b. False

68. The tutorial of Microsoft Windows makes an excellent demonstration piece for new computer prospects.

a. True
b. False

69. Windows provides help whenever the user needs it by pressing the *F1* key.

a. True
b. False

70. SIMD stands for Simple Instruction, Multiple Data.

a. True
b. False

71. Random Access Memory on a personal computer is factory configured and cannot be increased.

a. True
b. False

72. Microsoft Windows 95 requires that for MS-DOS be loaded on the computers hard drive.

a. True
b. False

73. Windows 95 *Explorer* allows you to copy files from your hard drive to a floppy disk of sufficient capacity.

a. True
b. False

74. True Multimedia computers must have at least a Pentium microprocessor.

a. True
b. False

75. Multimedia computers can play traditional audio CDs.

a. True
b. False

76. Computer information is stored as _____ information .

a. analog
b. digital
c. analog and digital
d. video

77. Which monitor is analog?

a. CGA
b. EGA
c. VGA
d. QRC

78. A customer asks the question, "Do you carry the disks I need to do backups on this computer?" This is an example of...

a. A Buying Signal.
b. An Objection.
c. A Warm-up Remark.
d. A Softening Phrase.

80-82 - Matching: Choose the best answer

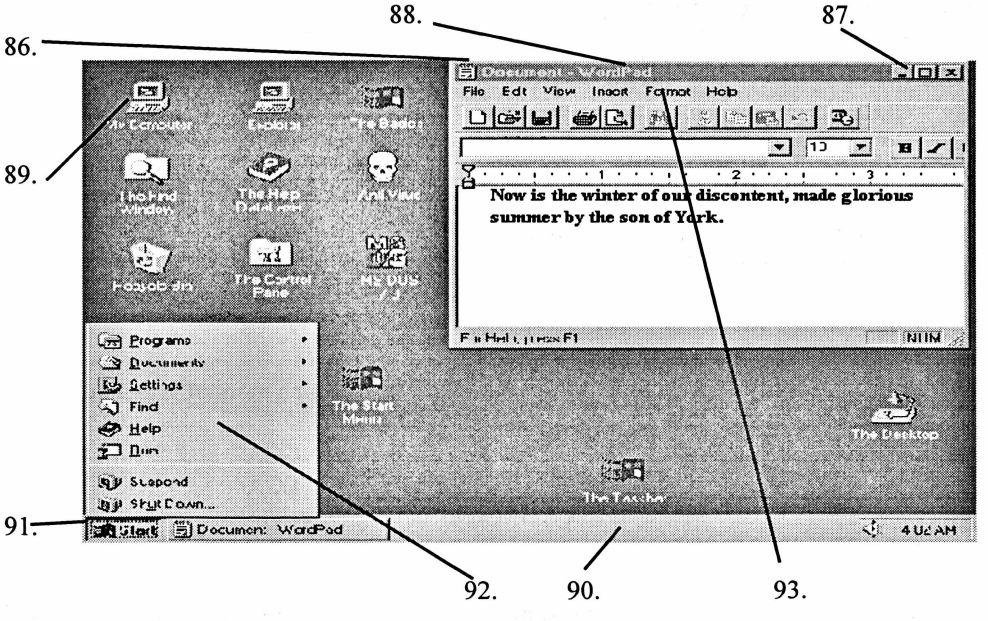
80.	Bus	a.	Transfers Data Over Phone Lines
81.	Printer	b.	Generates Hard Copy
82.	Modem	c.	Path for information inside a computer

83-85 Matching: Choose the best answer

83.	Qualifying	a.	Provides Pre-Sale Windows Support
84.	Follow-Up	b.	Critical to keeping equipment sold
85.	Open Window Hotline	c.	Vital questioning to determine customer needs

86-89: Match the items to the appropriate number in the diagram below.

a. Title Bar
b. ICON
c. Minimize Button
d. Control Box



90-93. Match the items to the appropriate number in the diagram above.

a. Menu Bar
b. Start Button
c. Menu Box
d. Taskbar

94-96 Matching: Choose the best answer.

94. Operating System
95. Operating Environment
96. Application

a. MS-DOS 6.2
b. Microsoft Back-up
c. Microsoft Windows 3.1

Choose the best answer:

97. The most widely used computer application in the world is...

a. accounting.
b. word processing.
c. communications.
d. databases.

98. Liquid Crystal Displays (ILCDs) produce an image by...

a. A system that wires each pixel individually, reducing power consumption compared to CRTS.
b. Firing a high energy beam at the display surface.
c. Heat transfer from the back light.
d. Emitting light from a low power diode.

99. The strictest emission control standards for monitors is called...

a. RGB.
b. CRT.
c. SVGA.
d. VLMF.

100 Windows requires all of the following *except...*

a. 386DX or higher microprocessor.
b. 4MB total memory.
c. A CD-ROM drive.
d. One high-density disk drive.

Our Mission:

"To Demystify Technology For The Mass Market."

"Our people are different because we get excited about helping people understand technology. We care about our customers, whether they're in our stores for a $3.00 or $300.00 purchase.

Every day, we give peace of mind to thousands of people who need help from someone. We're there to solve their problems and to connect them to the wonders of modern technology.

We are about people helping people. When America needs answers, we're there at every turn."

Len Roberts, President
Tandy Corporation/RadioShack

©1997 Tandy Corporation/Radio Shack,
100 Throckmorton St. Suite 1800 Fort Worth, Texas 76102
All rights reserved. Reproduction of this booklet
in whole or in part without permission is forbidden

TAKING CARE OF OUR CUSTOMER

The 10 Commandments of Good Business

---

1. Customers are the most important people in any business.

2. Customers are not dependent on us--
we are dependent on them.

3. Customers are not an interruption of our work--
they are the purpose of it.

4. Customers do us a favor when they call--
we are not doing a favor by serving them.

5. Customers are a part of our business--
they are not outsiders.

6. Customers are not cold statistics--
they are flesh and blood human beings
with feelings and emotions like our own.

7. Customers are not people to argue with
or match wits with.

8. Customers are people who bring us their wants--
it is our job to fill those wants.

9. Customers are deserving of the most courteous
and attentive treatment we can give them.

10. Customers are the lifeblood of this and every
other business.

RadioShack[SM]

You've got questions. We've got answers.[SM]

FO-322